FOUNDED IN 1856

# RAILWAY AGE

STATISTICAL AND OUTLOOK NUMBER

JANUARY 8, 1949

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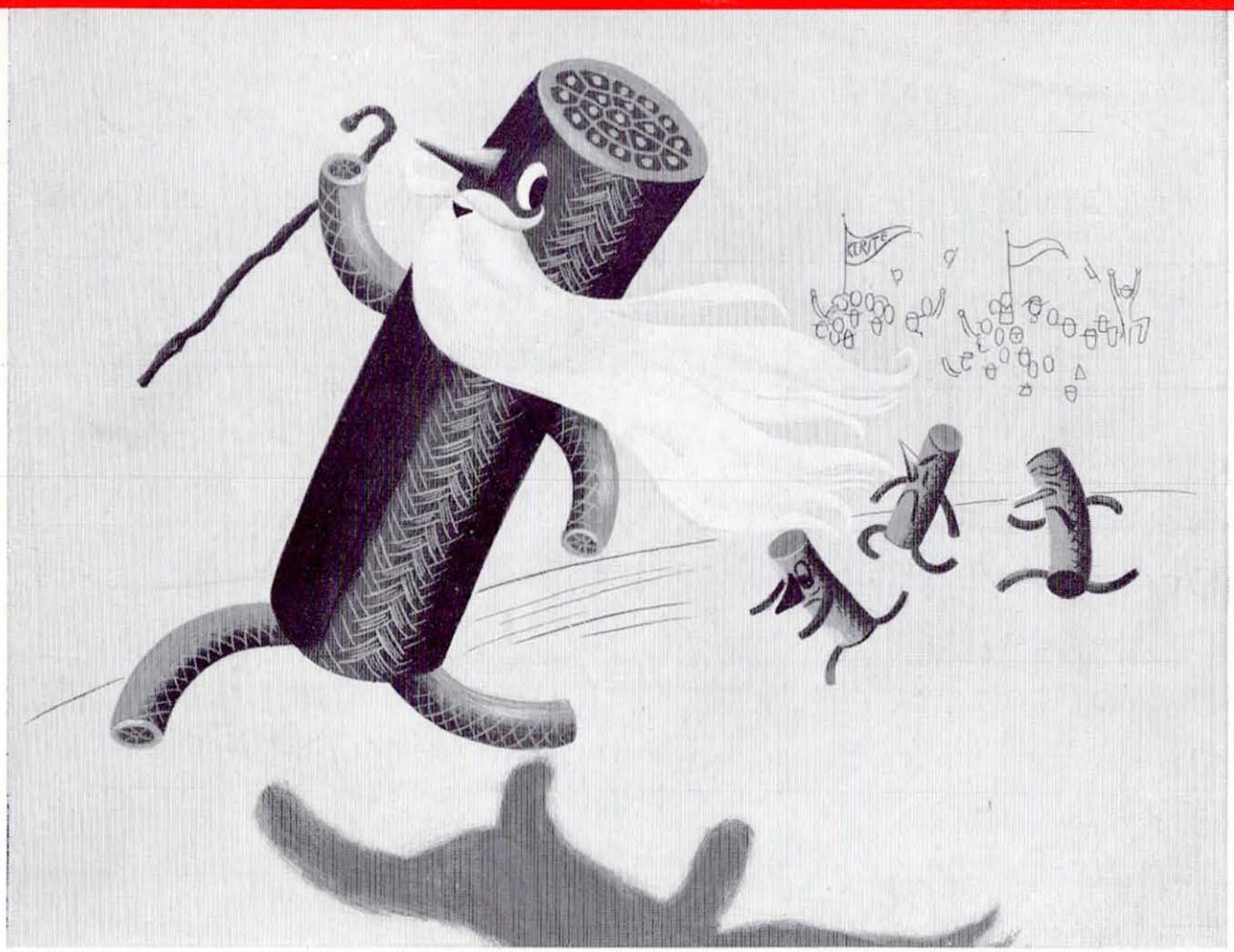



## How to be young at 90...

WHEN someone gets to be 90 or 100, he is usually asked just how he got to be that old.

We are over 90. But nobody has asked us how we got that old so we were reflecting on it, and we think we have the answer. In the first place, people apparently don't think of us as being old.

We are still alive and kicking today because we have a lot of good friends who use our cable and insist that we stay that way. In fact, in spite of all the new insulations available, more people want more Kerite than ever before. They know from experience that its cost per year is very, very low.

They say they have never seen anything just like Kerite and they are right, because there *isn't* anything like it. The insulation we make today contains the same Kerite invented by A. G. Day in the 1860's. Nobody else makes it. Nobody else even knows *how* to make it.

How to be young at 90? Well—just be sure to merit the confidence of the people who insist that you stay that way. The Kerite Company, 30 Church Street, New York 7, N. Y.

Offices also at: 122 South Michigan Ave., Chicago 3; 582 Market Street, San Francisco 4; 714 West Olympic Blvd., Los Angeles 15.

**Kerite Insulation—Your Cable's Best Life Insurance**

DAY KERITE

KERITE CABLE

# WHEEL IMPROVEMENTS in these 31 places!

1. American Car & Foundry Co.
2. Canadian Car & Foundry Co.
3. Griffin Wheel Co.
4. Marshall Car Wheel & Foundry Co.
5. New York Car Wheel Co.
6. Pullman-Standard Car Mfg. Co.
7. Southern Wheel (American Brake Shoe Company)

Chilled car wheels are made by AMCCW members at each and every point marked on this coast-to-coast map. Whichever location is nearest you, count on the plant there as a source of good wheels that are being improved continually. Higher standards in design . . . in metallurgical practices . . . in annealing techniques . . . in chill control . . . in inspection procedures — all these are AMCCW long-range aims that have become facts today.

Each of the 31 modern foundries shown above is a good place not only to get the wheels you need, but also to market the wheel scrap you may have on hand. At each, you can be sure of the sort of people with whom you're doing business — the most responsible people in the industry . . . companies voluntarily committed to maintaining ever-advancing standards.

AMCCW

**ASSOCIATION OF MANUFACTURERS OF CHILLED CAR WHEELS**
445 No. Sacramento Boulevard, Chicago 12, Ill.

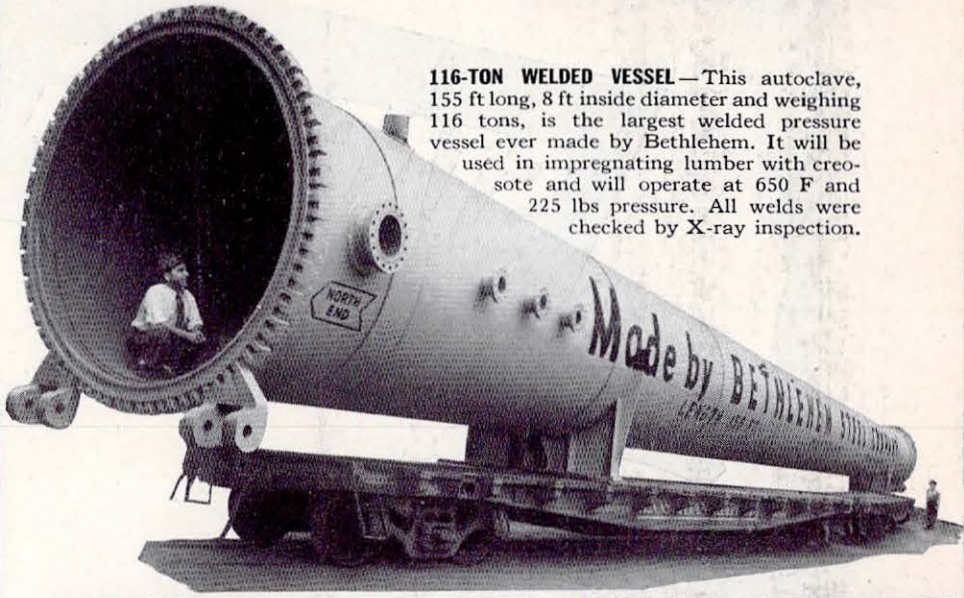
7126

Published weekly by Simmons-Boardman Publishing Corporation, Orange, Conn. Executive Offices, 30 Church Street, New York 7, N. Y. Entered as second class matter at Orange, Conn., under the act of March 3, 1879. Subscription price $6.00 for one year. U. S. and Canada. Single copies, 50 cents each. Vol. 126, No. 2.

# Some Bethlehem Highlights of '48

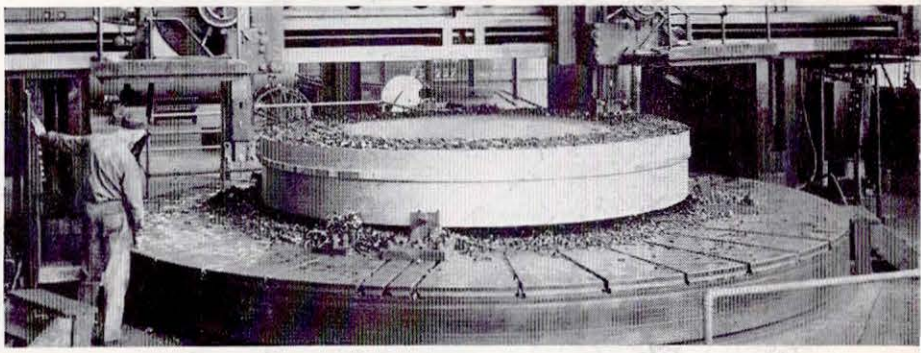
**EMPLOYEE WELFARE**—The year saw marked advances in working conditions and improved facilities for the welfare of Bethlehem employees. Above is the new welfare room at the Williamsport Division, with individually air-conditioned lockers at the upper left and germ-killing ultr - violet lights on walls at the right.

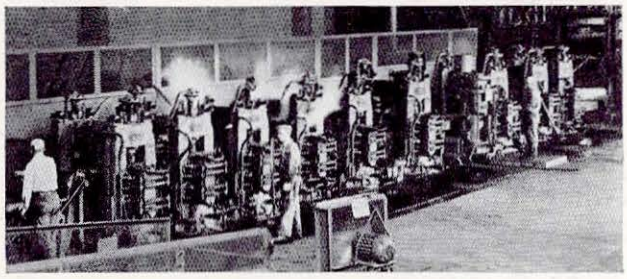
**SAFETY ACCOMPLISHMENTS**—First, second, third and fourth places in the 1947-1948 Safety Contest among major steel plants of the country, sponsored by the National Safety Council, were awarded to plants of Bethlehem Steel Company. This is the first time in the history of the contests that the first four places have been won by units of a single company. In addition, other awards were made to Bethlehem operations during the year for outstanding safety accomplishments.




**116-TON WELDED VESSEL**—This autoclave, 155 ft long, 8 ft inside diameter and weighing 116 tons, is the largest welded pressure vessel ever made by Bethlehem. It will be used in impregnating lumber with creosote and will operate at 650 F and 225 lbs pressure. All welds were checked by X-ray inspection.

**ALLOY STEEL FILM**—A new motion picture describing the production of alloy steels in Bethlehem plants is now nearing completion and is expected to be ready for release during the early part of the new year.





**CYCLOTRON MAGNET**—Machining a pole piece for The University of Chicago giant cyclotron, designed to produce 400,000,000 electron volts. The magnet for this new atom smasher is built up of 28 rectangular members forming the yoke and six circular pole pieces, and weighs a total of 4,140,000 lbs. This is the second magnet of this size built by Bethlehem.

**NEW BAR AND ROD MILL ON COAST**—A new high-speed bar and rod mill was put into operation during 1948 at Bethlehem Pacific's Los Angeles Plant. The fastest of its type on the Pacific Coast, this mill produces a variety of flats, merchant sections, bars and rods for Western industries.

**NEW BLAST FURNACE**—This blast furnace at Sparrows Point Plant, put into service during the summer, is part of Bethlehem's postwar expansion program involving the expenditure of approximately $300,000,000 and increasing Bethlehem's annual ingot capacity by 900,000 net tons.

BETHLEHEM
STEEL

"Brake Shoe research serves you today and anticipates tomorro

Wm. B. Given, Jr., Preside

# STARTING PLACES

# FOR GOOD

# STOPS

American Brake Shoe Company, in these foundries covering the entire country, manufactures products based on Brake Shoe research that has anticipated and served the needs of American railroads. Maintaining its tradition of leadership, it has pioneered improvement after improvement for efficient, safe and low-maintenance operation of railway equipment.

These developments have ranged from the earliest Diamond "S" brake shoe to the newest carbon insert brake shoe and the American Brake Shoe Controller. The American Brake Shoe Company, 230 Park Ave., New York 17, N. Y.

AMERICAN Brake Shoe COMPANY

**BRAKE SHOE AND CASTINGS DIVISION**

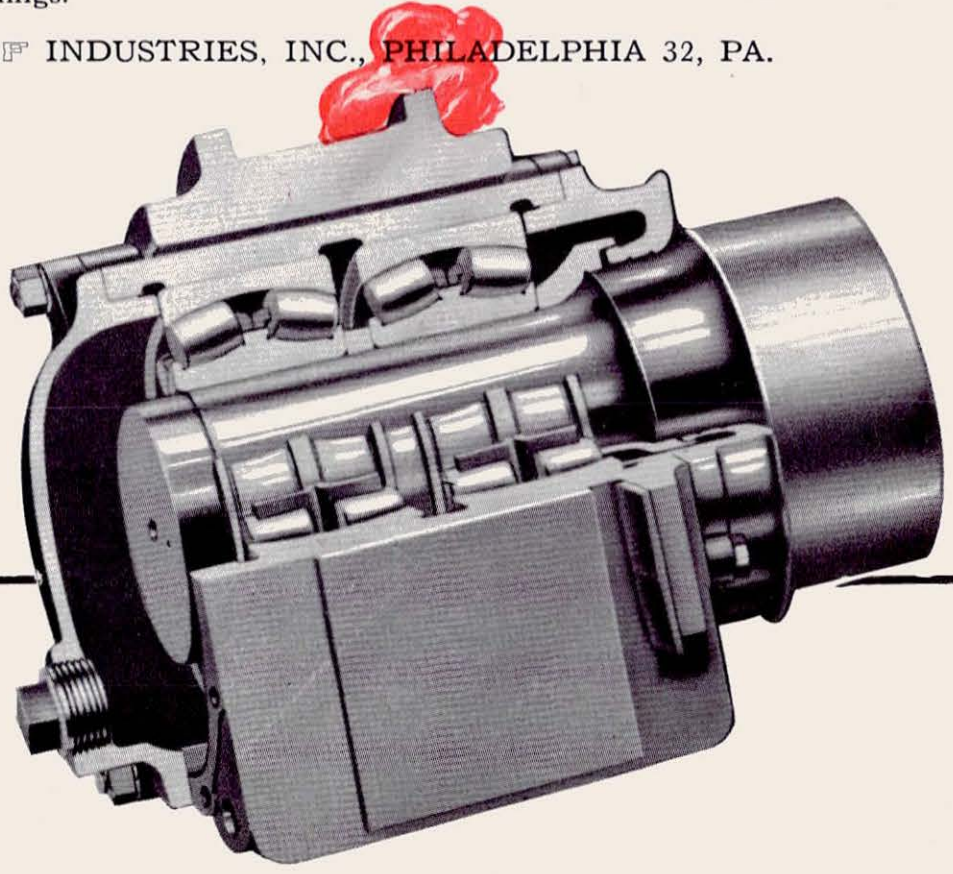
6248

# 2 Steps Ahead

## 1 Grease-Lubricated SKF ROLLER BEARINGS!

Railroads have always wanted journal bearings that help overcome high operating costs by cutting maintenance . . . that require inspection only when wheel assemblies are shopped for wheel turning . . . that minimize the possibility of man failure due to applying the wrong lubricant, the wrong amount, or none at all . . . that reduce the danger of improperly fastening front or back covers. SKF provides the perfect answer in journal bearings that are lubricated with *grease*. Result: Change grease when wheels are turned —no lubrication inspection nor grease added between wheel turnings. 6519

SKF INDUSTRIES, INC., PHILADELPHIA 32, PA.



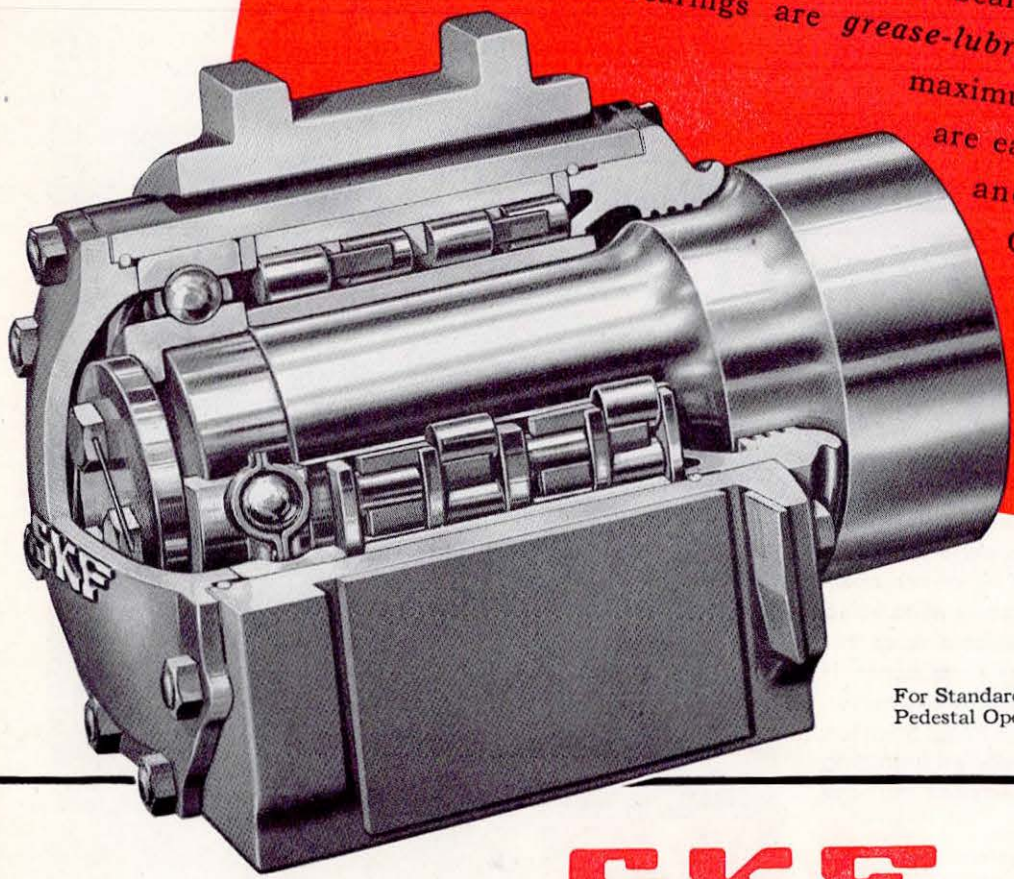
● *Tests with grease-lubricated SKF Bearings by leading railroads throughout the United States indicate substantial savings in maintenance costs and a reduction in actual hot boxes. One railroad estimates that the saving in maintenance costs on one car for one year is equal to the cost of one roller bearing journal assembly.*

For proposed AAR Standard Pedestal Openings for Roller Bearings.

# *in Railroading!*

## 2 SKF NARROW PEDESTAL JOURNAL BOXES!

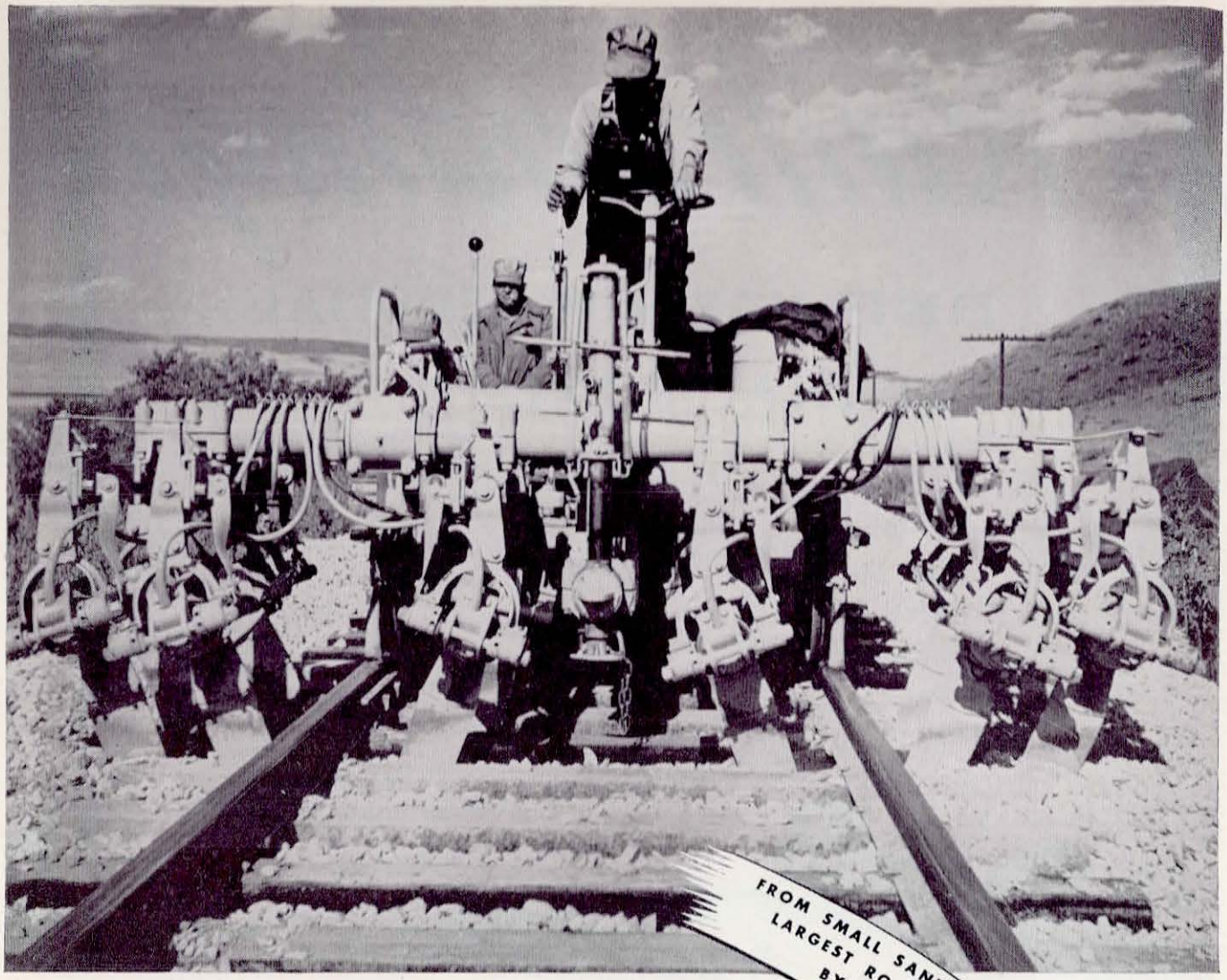
Railroads have always wanted a dependable roller bearing and box to fit the narrow pedestal truck. So SKF provides the perfect answer with an unbeatable combination: A multiple-row, cylindrical roller bearing to carry the radial load and a non-adjustable ball bearing to take the end thrust. Both bearings are *grease-lubricated* . . . have maximum capacity . . . are easy to assemble and disassemble. Only a minimum number of spare assemblies are required.




For Standard AAR Narrow Pedestal Openings.

**SKF**

**JOURNAL BOXES AND BEARINGS**



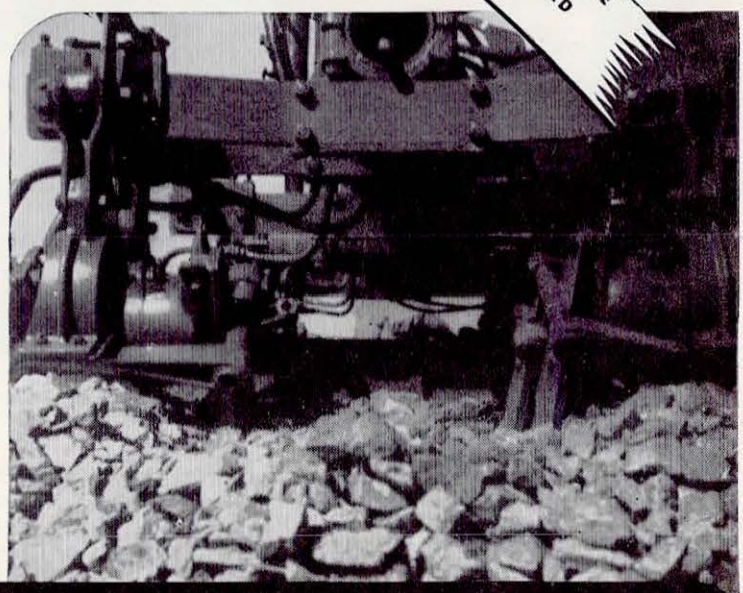

# IN ANY BALLAST

## THE JACKSON MULTIPLE TAMPER

**PERFORMS WITH AMAZING EFFICIENCY**

In ANY ballast, large, small, medium or mixed, the JACKSON Multiple Tamper puts up perfect track in just ONE operation — with just ONE tamper operator instead of 12. Absolute uniformity of tamping is easily attained, no follow-up or smoothing operation is required, and a degree of permanence is achieved which only the vibratory action of Jackson tampers can supply. These are FACTS which JACKSON "MT's" have firmly established in putting up hundreds of miles of track — track that has stayed "put."

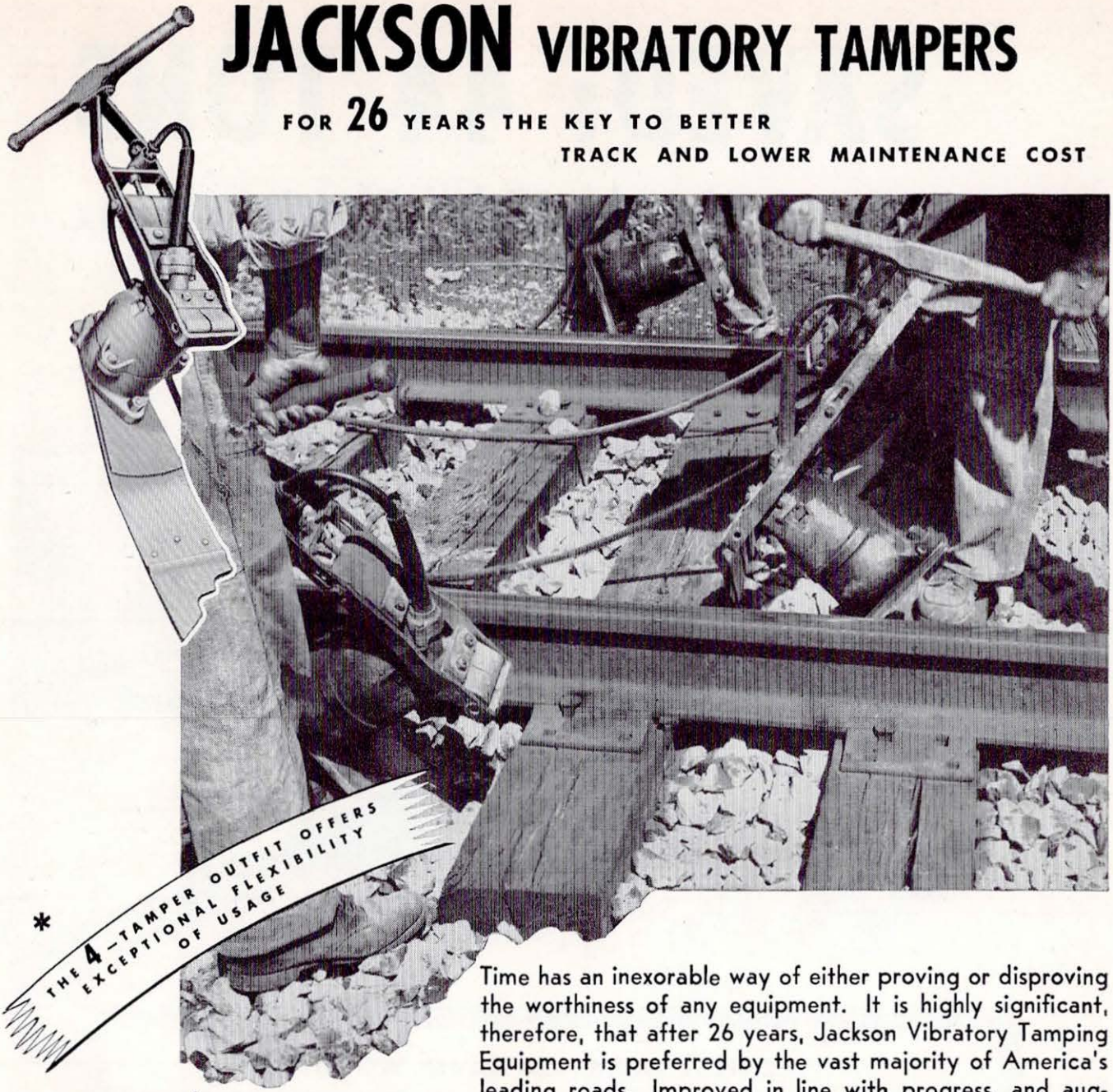
Working in tandem, two of these machines will usually double the daily footage without materially increasing the gang ahead of the machine.



**ELECTRIC TAMPER & EQUIPMENT CO., Ludington, Mich.**

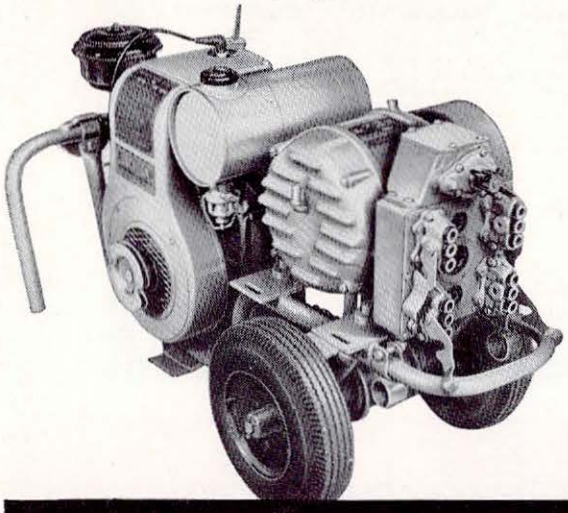
# JACKSON VIBRATORY TAMPERS

FOR 26 YEARS THE KEY TO BETTER
TRACK AND LOWER MAINTENANCE COST



* THE 4-TAMPER OUTFIT OFFERS EXCEPTIONAL FLEXIBILITY OF USAGE

Time has an inexorable way of either proving or disproving the worthiness of any equipment. It is highly significant, therefore, that after 26 years, Jackson Vibratory Tamping Equipment is preferred by the vast majority of America's leading roads. Improved in line with progress, and augmented to cover every phase of tamping to best advantage, Jackson Tamping Equipment, today, more than ever, offers you the outstanding means of putting up and maintaining better track at the very minimum of cost. Drop us a line for complete information.



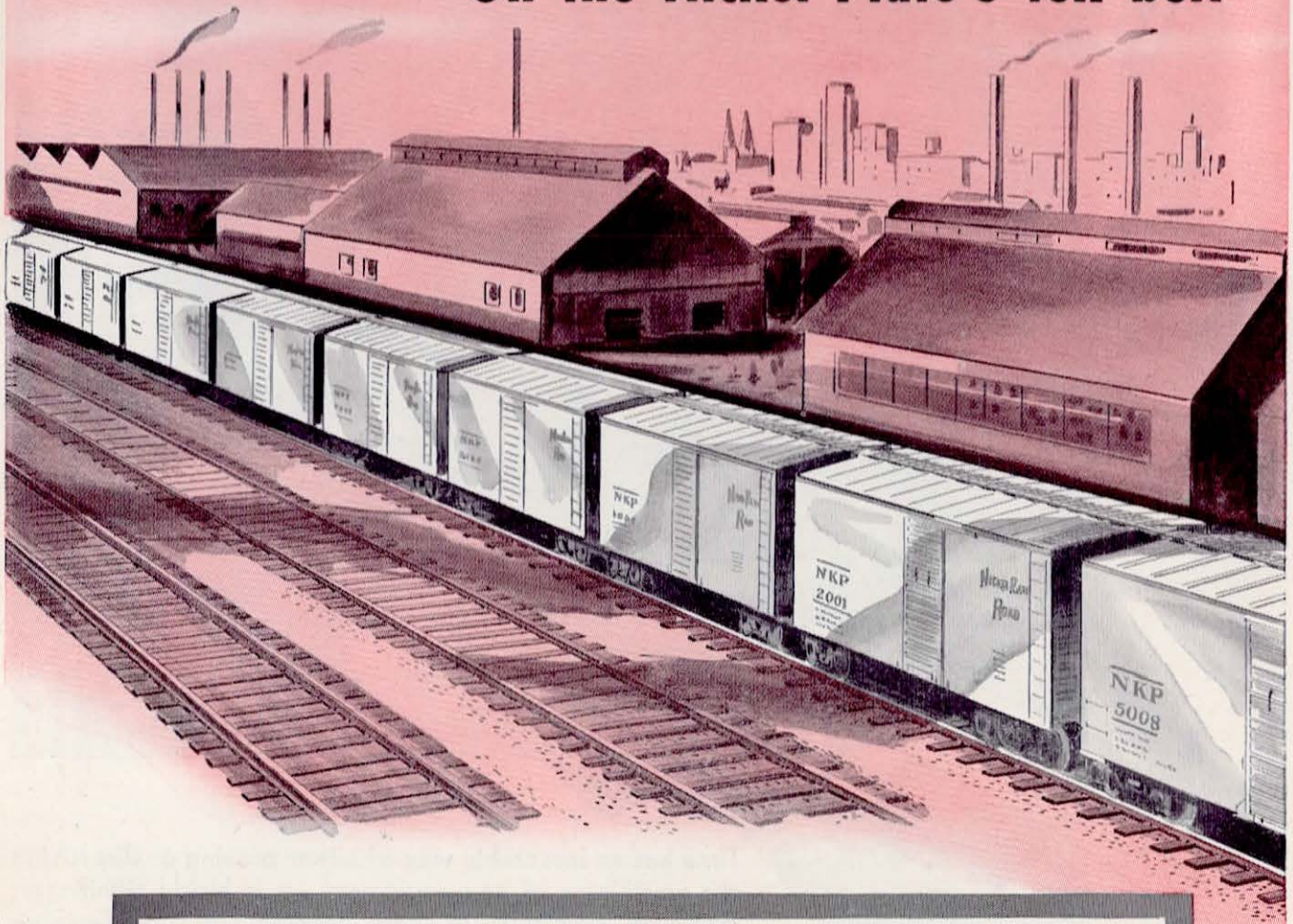
*

Four Jackson Tampers and our M-2 Power Plant constitute not only the ideal outfit for spotting, skeletonizing and such out-of-face surfacing as is usually done by the average section gang, but is also unmatched by any other unit tamper when grouped in extra gang service. For doing an over-all job of maintenance it is, by long odds, the best to be had.

**ELECTRIC TAMPER & EQUIPMENT CO., Ludington, Mich.**

# SAVED: 44 TONS

## On the Nickel Plate's ten box




### SEE HOW ALUMINUM SAVES WEIGHT!

| Structural unit | Weight in Aluminum | Weight in Steel* | Weight Saved |
|---|---|---|---|
| Floor stringers | 306 | 988 | 682 |
| Ends | 961 | 2,669 | 1,708 |
| Sides | 2,527 | 5,872 | 3,345 |
| Roof | 666 | 1,923 | 1,257 |
| Doors | 503 | 1,022 | 519 |
| Running boards & brake step | 243 | 380 | 137 |
| Hand brake | 18 | 52 | 34 |
| Miscellaneous connections, gussets, etc. | 416 | 1,185 | 769 |
| Rivets, bolts, etc. | 272 | 770 | 498 |
| Totals | 5,912 | 14,861 | 8,949 |

*Weight of comparable steel items specified as standard for freight car construction by Association of American Railroads.

*Modern Railroading Calls for MAXIMUM Economies* ⇨

# OF DEAD WEIGHT

## express cars of Alcoa Aluminum

Side sills to running boards, they're made of Alcoa Aluminum.

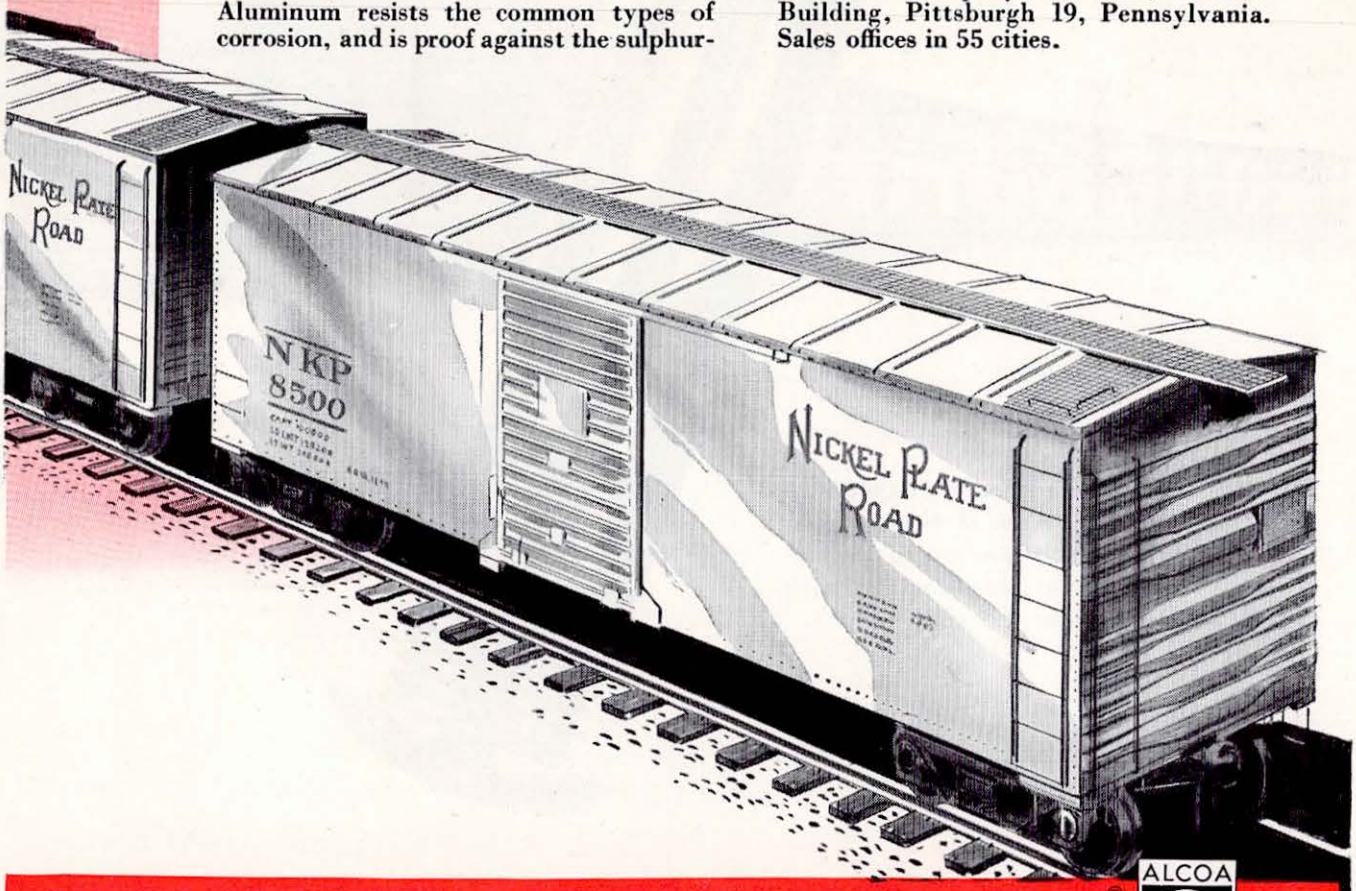
***Lighter***—to couple up with high-speed passenger cars on express runs, carry more load than conventional cars.

***Easier to haul***—Locomotives use less power to start and haul these cars loaded or empty; roadbeds get less pounding, because high-strength Alcoa Aluminum—sheet, plate, bar, extrusions, fasteners—saves almost 4½ tons of dead weight per car—44 tons for all ten. This saving equals the weight of 1.8 cars built of conventional materials.

***Less expensive to maintain***—Alcoa Aluminum resists the common types of corrosion, and is proof against the sulphurous fumes which eat away other common metals. These cars need not be painted for outside protection.

***Produced on standard equipment***—Every part fabricated from Alcoa Aluminum by specialty manufacturers—ends, roof, doors, underframes, and others—was built with their existing equipment as ordinarily used for steel. For *hauling* cars, for *maintaining* them, or *building* them, Alcoa Aluminum is easy to handle!

Why not see how Alcoa Aluminum can improve your rolling stock replacement program? Just call your Alcoa representative at the nearby sales office, or write Aluminum Company of America, 2178 Gulf Building, Pittsburgh 19, Pennsylvania. Sales offices in 55 cities.




**ALCOA** FIRST IN ALUMINUM®

# STEAM POWER

The modern Flannery Flexible Staybolt is the result of 44 years of invention, development and improvement, and is used almost exclusively by American Railroads.

# FLANNERY BOLT

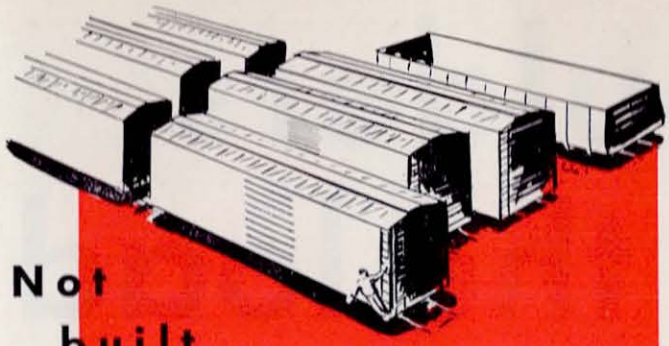
# still shoulders most of the load*

## *and Flannery Flexible Staybolts*

## help to prolong firebox life, reduce maintenance costs, and make steam power economical and dependable

*More than 83% of the freight locomotive miles are produced by steam power.

**COMPANY** **BRIDGEVILLE PENNSYLVANIA**



Not
built
down to
minimum
requirements,
but . . .

# Built *up* to a

**STANDARD RAILWAY EQUIPMENT**

# * Standard

STANDARD has never "split the difference" with Quality for a very good reason: *there is no such thing as standing still!* To attempt it is to move backward. By continuing to set our own achievement goals rather than building to requirements, we are continually setting new "standards" for the industry.

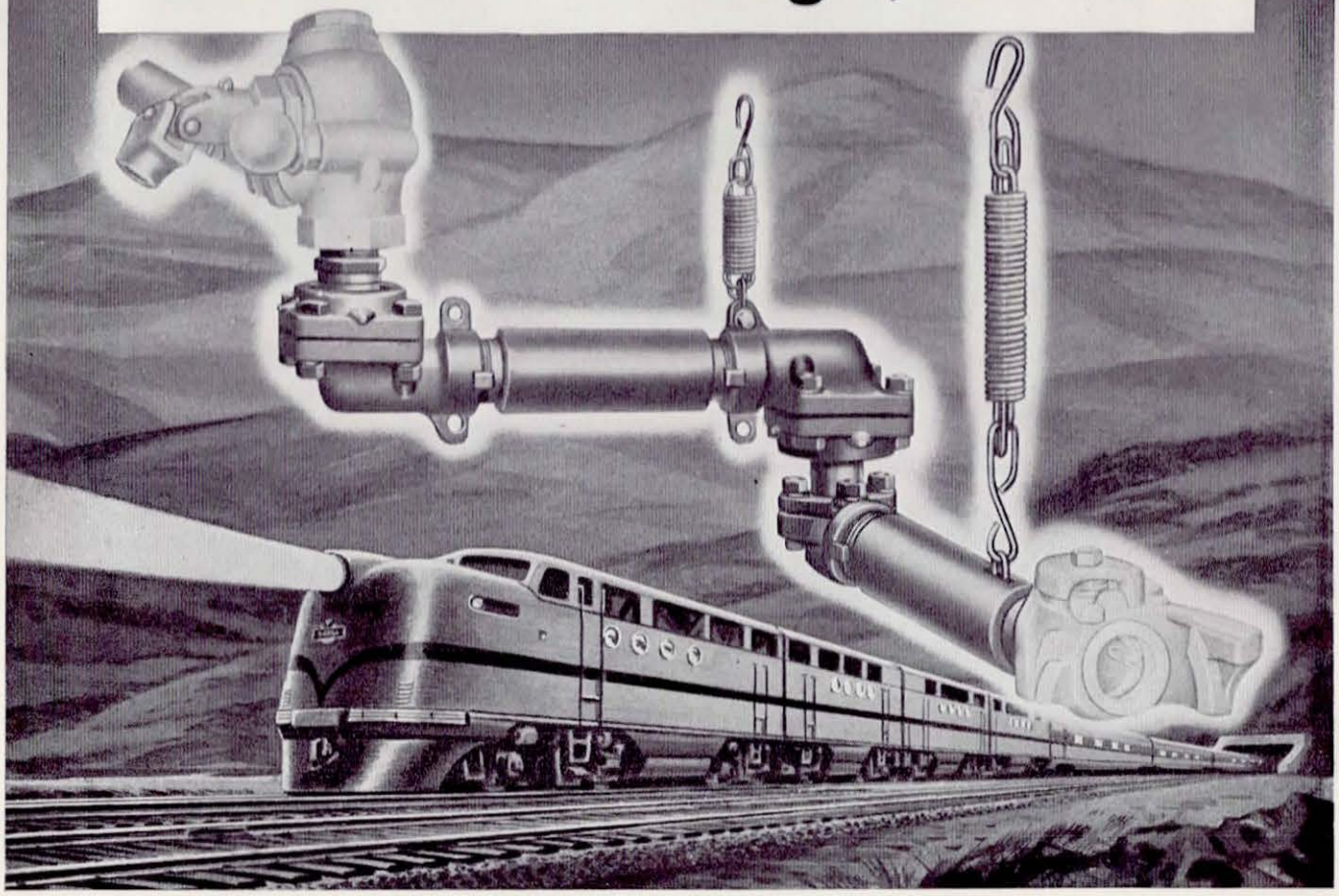
*For instance: No other freight car roof of the same weight is as strong as *Standard's* Diagonal Panel Roof.* For instance: No other freight or gondola car end of the same weight is as strong as *Standard's* Improved Dreadnaught End.* For instance: There is no single freight car specialty that is more valuable for eliminating repair shopping time than *Standard's* Metal Floor Protector.* *For instance*. No other development *is available* to do the job of *Standard's* Centering Device with Coupler Height Adjustment.

*The World's Largest Fabricator of Railway Car Specialties*

**MANUFACTURING COMPANY**

**310 S. Michigan Avenue, Chicago 4 • 247 Park Avenue, New York 17**

# Here's Why BARCO Steam Heat Connections Last Longer, Cost Less



Barco Steam Heat Connections for passenger cars and rear of tender stay on the job a long, long time. Barco has 50% fewer gaskets, springs and wearing parts to maintain, 50% fewer joints to leak. It has hardened alloy steel forged metal wearing and working parts. The long-wearing gaskets make it a long time between replacements. No matter how tough conditions may be, Barco will not fail or blow out. Many main parts of all connections are interchangeable, thus reducing funds tied up in protection stock. Barco Manufacturing Company, 1800 Winnemac Avenue, Chicago 40, Ill. In Canada: The Holden Co., Ltd., Montreal, Canada.

**BARCO Manufacturing Company**

FREE ENTERPRISE—THE CORNERSTONE OF AMERICAN PROSPERITY

# when you Re-*Standard*-size worn cylinder liners with PORUS-KROME*

Don't rebore worn Diesel cylinder liners—have them re-*Standard*-sized with PORUS-KROME!

By thus eliminating need for oversize liners, pistons and rings, the stores department can release space required for oversize parts. Cost of inventory will be reduced accordingly. And, re-*Standard*-sizing costs less than buying new liners!

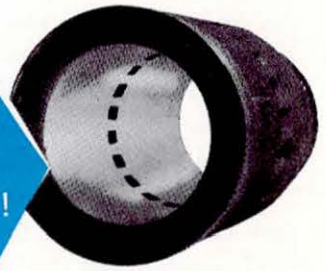
PORUS-KROME saves money for the mechanical department, too. Compared with unprocessed liners, PORUS-KROME extends liner life by as much as 400%; ring life by 300%. This means less frequent liner replacements, reduced maintenance and increased availability.

You can arrange to re-*Standard*-size your worn liners through Diesel engine builders who supply PORUS-KROME liners as standard in new equipment.

*Copyright 1948 by Van der Horst Corporation of America.*

If your engine builder or liner supplier does not offer this service, send your worn liners direct to Van der Horst. When you buy new liners, specify Van der Horst PORUS-KROME for longer life and reduced maintenance. Write today for full information.

*PORUS-KROME is a dense, hard, wear and corrosion-resistant chromium, produced by the Van der Horst Corporation of America, and which gives working surfaces an infinite number of tiny oil-retaining reservoirs for perfected lubrication.




**VAN DER HORST CORPORATION OF AMERICA • OLEAN, N. Y.**

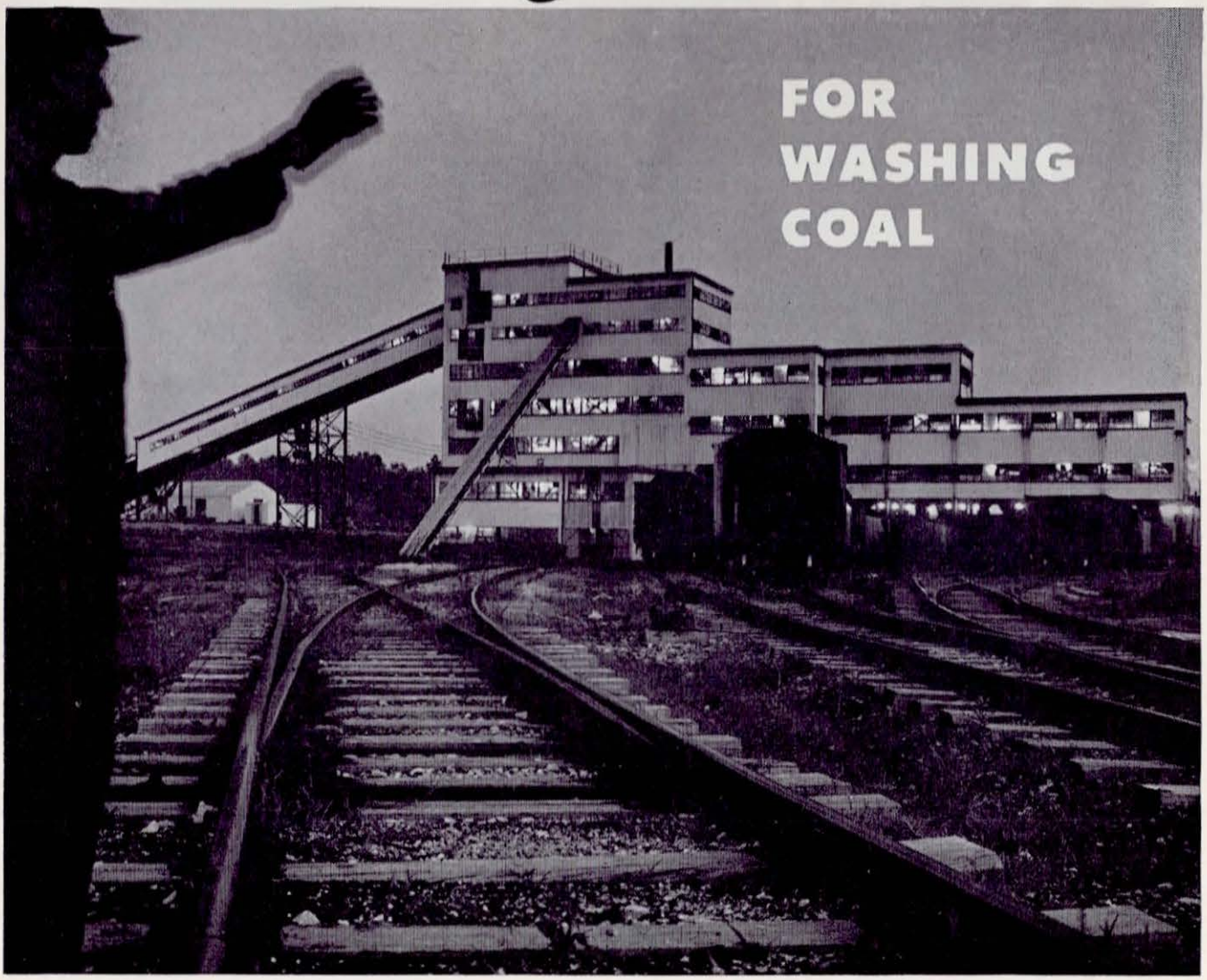
U. S. PATENTS 2,048,578, 2,314,604 AND 2,412,698

**PORUS - KROME**

*Good for the Life of your Engines*

VAN DER HORST TRADE MARK

# Newest thing in Laundries—




**To measure the water** used daily in this modern coal preparation plant, a water meter would have to register in millions of gallons.

So great are the demands for water to wash coal clean that some mine operators find it necessary to create lakes to assure an adequate supply.

New preparation plants that mechanically prepare coal for specific uses are only part of the modernization and mechanization program of the bituminous coal industry. They are important in keeping coal prices within reason despite rising costs. These costs, of course, include miners' take-home pay, which has tripled since 1940. Increased use of highly specialized machines for cutting, loading, and moving coal represents still another factor in keeping coal's price down.

To step up the efficiency of coal mining in the face of today's rising costs, even more mechanization of mines is needed. New and better machines, added facilities for cleaning and sizing coal, and new mines, too, are required to improve the supply of high-quality coal at reasonable prices.

All this will take hundreds of millions of dollars over and above day-to-day operating costs.

The coal industry expects to provide this money largely from earnings which will be plowed back into the business so that coal can still better serve the nation.

**BITUMINOUS COAL**

**BITUMINOUS COAL INSTITUTE**

A Department of National Coal Association

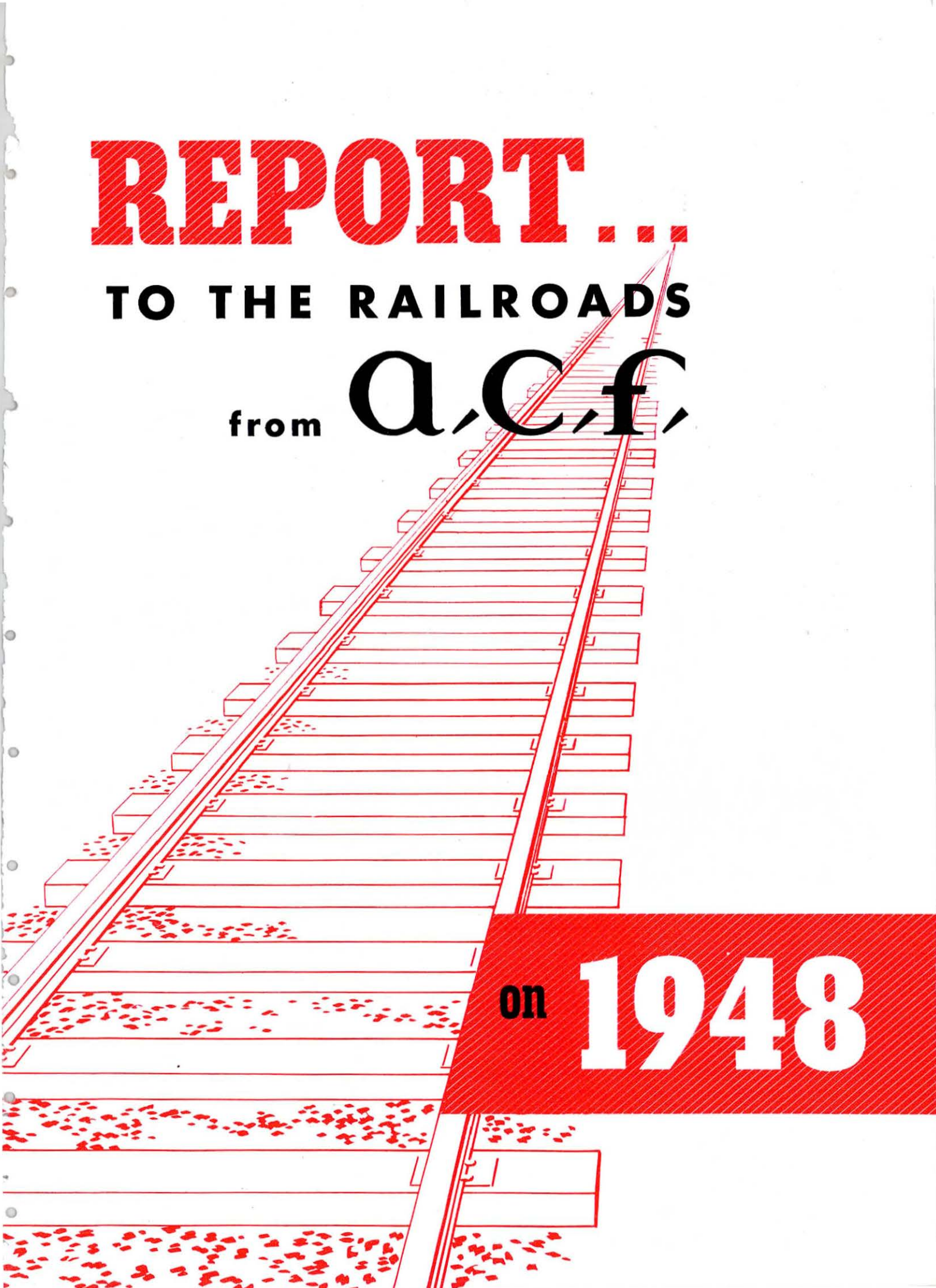
**WASHINGTON, D. C.**

**BITUMINOUS COAL . . . LIGHTS THE WAY . . . FUELS THE FIRES . . . POWERS THE PROGRESS OF AMERICA**

# REPORT...

## TO THE RAILROADS

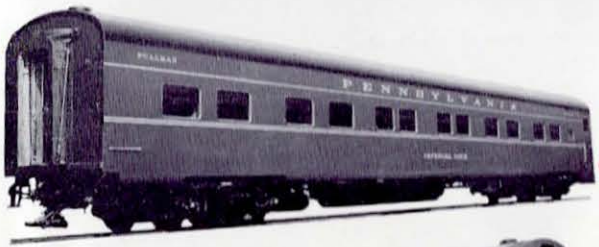
## from a.c.f.



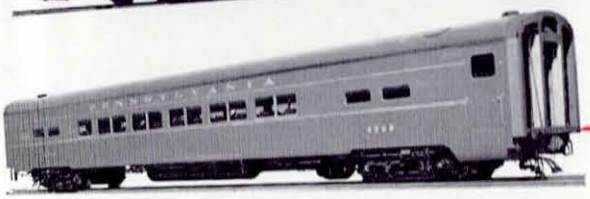
## on 1948

# PASSENGER

RECREATION CARS




BEDROOM-COMPARTMENT SLEEPERS




COACHES

ROOMETTE-SLEEPERS

PARLOR CARS

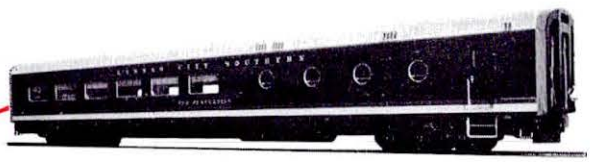
COACHES

COACHES

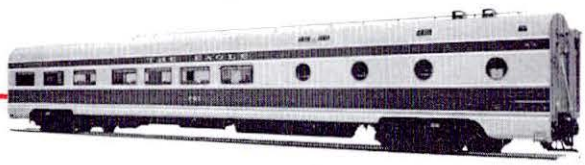
# CARS

a.c.f. has built everything from sleepers to subway cars during 1948. Developed in cooperation with their respective Roads, these luxurious cars are currently setting new traffic records... attracting more travellers and boosting passenger-revenue on all runs! Interiors offer the last word in comfort and convenience. Exterior treatments illustrate a.c.f.'s ability to work with every type of metal.

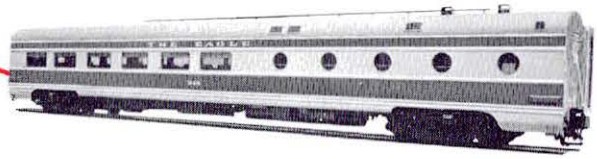
DINERS



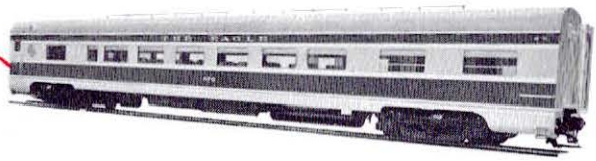
DINER-LOUNGE CARS



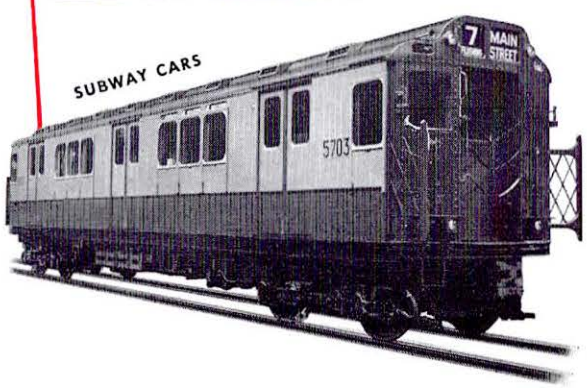
DINING CARS



LOUNGE-GRILL CARS



SUBWAY CARS

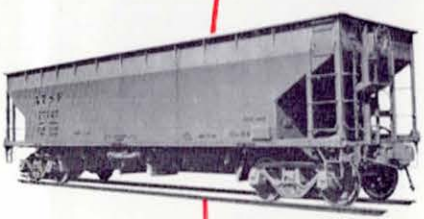


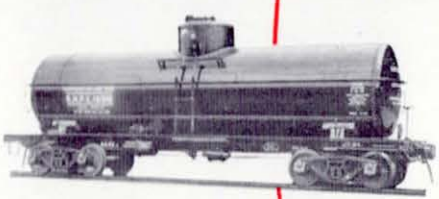

a.c.f.

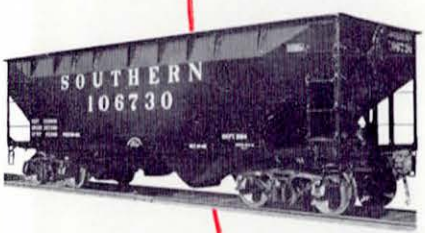
CAR BUILDERS TO AMERICA'S RAILROADS

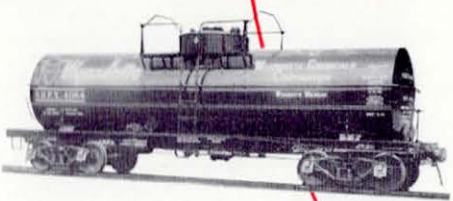
# FREIGHT

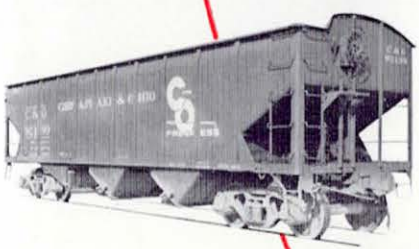
ACF's production versatility was clearly demonstrated by the many types of freight cars built for America's leading Railroads in 1948. As materials became available in larger quantities, ACF's vast facilities for assembly-line production began to roll. Great strides were made in all-welded construction, as ACF's mass-production techniques were fully utilized.

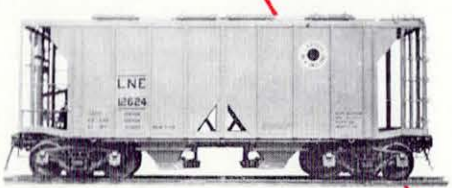


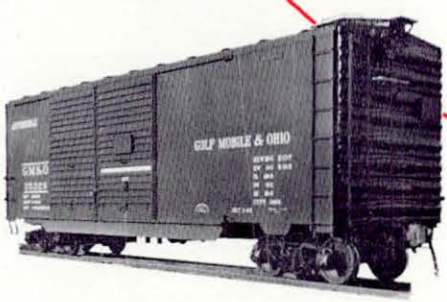




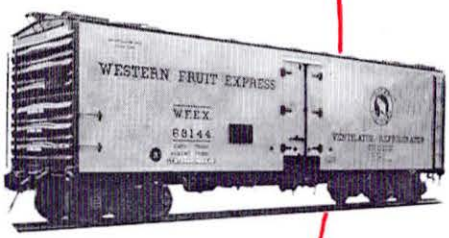


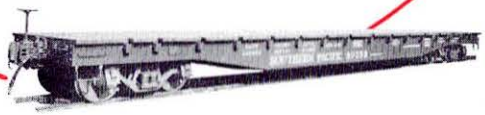


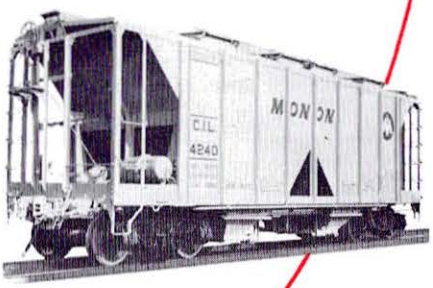


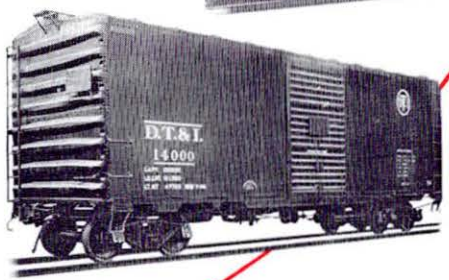
# CARS

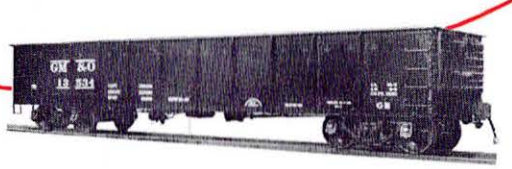
**ON STANDARDIZATION:**
7000 all-welded hopper cars, all of an a.c.f. standardized design, are being built for the Chesapeake & Ohio Railroad. Here's concrete evidence of the ever-increasing acceptance of such standardized all-welded freight cars.





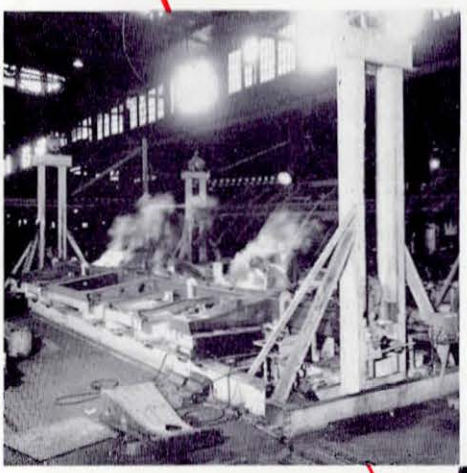



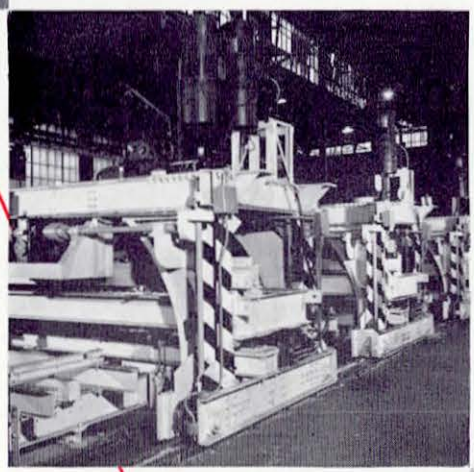
**a.c.f.**

**CAR BUILDERS TO AMERICA'S RAILROADS**

# FACILITIES

Making full use of the advantages of assembly-line production, new A.C.F.-designed facilities have emerged from the experimental stage during 1948. Four great A.C.F. plants—Huntington, West Virginia; Berwick, Pennsylvania; Madison and Chicago, Illinois—are now completely set up with the latest production equipment. Shortly, every A.C.F. plant will be turning out better cars by modern assembly-line methods. It's all part of A.C.F.'s continual striving to build the world's finest rolling stock more efficiently.

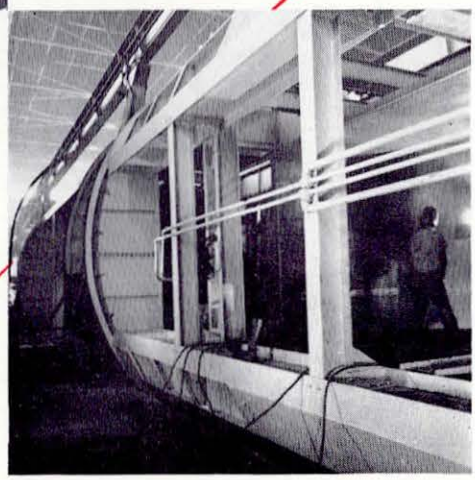


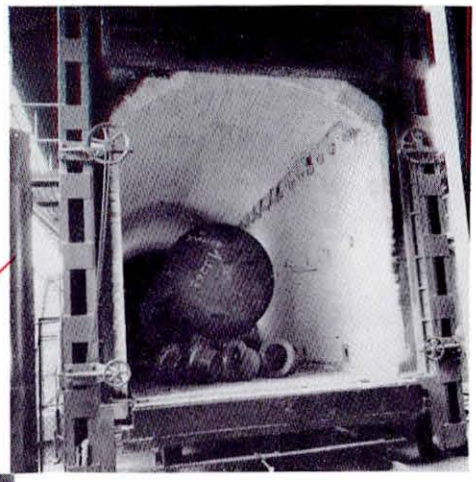


**Underframe Rotator Jig** Pneumatically operated jigs *automatically* position underframe components ...flat, rigid, true for production welding. Then the whole assembly is rotated for "down" welding. It's all for speed, for quality, for the customer's advantage!

**Automatic Welding Gantries** Complete car side is both *cross* and *side* welded in minutes—not hours! First used on all-welded "Hundred mile-an-hour Reefers" for Railway Express Agency and Atlantic Coast Line. Now being extended to all A.C.F. car building!

**Complete Freight Car Rotators** An entire freight car is locked squarely in place...then rotated to facilitate high-strength welding. It means *stronger* cars, *precision-built* cars—cars that can shrug off the strain of swifter schedules!

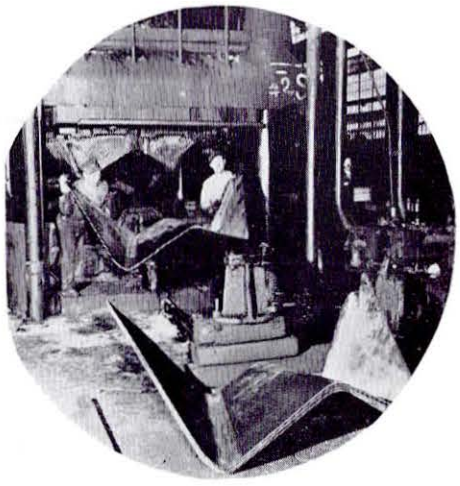


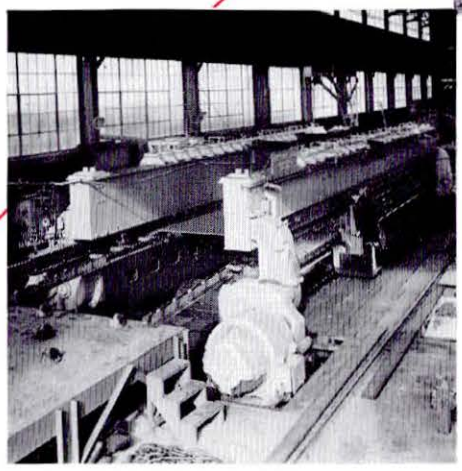


**Cavernous Stress-relieving Furnaces** Take an entire tank for a tank car plus other various metal parts in one gulp.

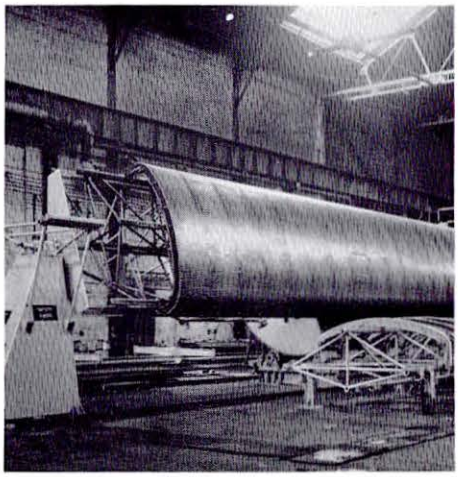
**X-Ray Equipment for Checking Welds** Although A.C.F. standards are set well above the I.C.C. specifications, tanks, for example, are also subject to exacting tests for elongation, tensile strength across the weld, and consistency of the weld itself. Radiograph Interpretation plays an important role in A.C.F. car building.

**Massive Stamping Machines** For precision forming and shaping of pre-fabricated sections and sub-assemblies.





**Giant Planer Speeds Automatic Welding of Tanks** In a single operation, it cuts to width, trues the noses, bevels the upper and lower edges, and two sides of the plate. It facilitates automatic welding in A.C.F. swift assembly-line production of all-welded tank cars. Cars that are tonnage-dependable!



**Passenger Car Roof Rotators** Roof sections are clamped tight to the carlines without spot welds, then moved as a complete assembly for automatic welding. Roof sheets are joined to carlines in one continuous pass, with a homogeneous seam that's leak tight. A.C.F. all-welded roofs show not even the slightest ripple as you sight along the smooth unbroken length.

a.C.f.

**CAR BUILDERS TO AMERICA'S RAILROADS**

# for 1949

a.C.f. has the plant facilities and production techniques to build better cars of all types—and build them more efficiently than ever.

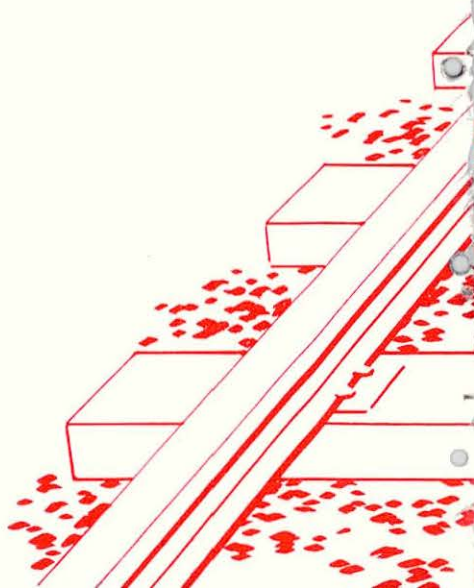
American Car and Foundry Company

New York · Chicago · St. Louis · Cleveland · Pittsburgh

Philadelphia · Washington · San Francisco

a.C.f.

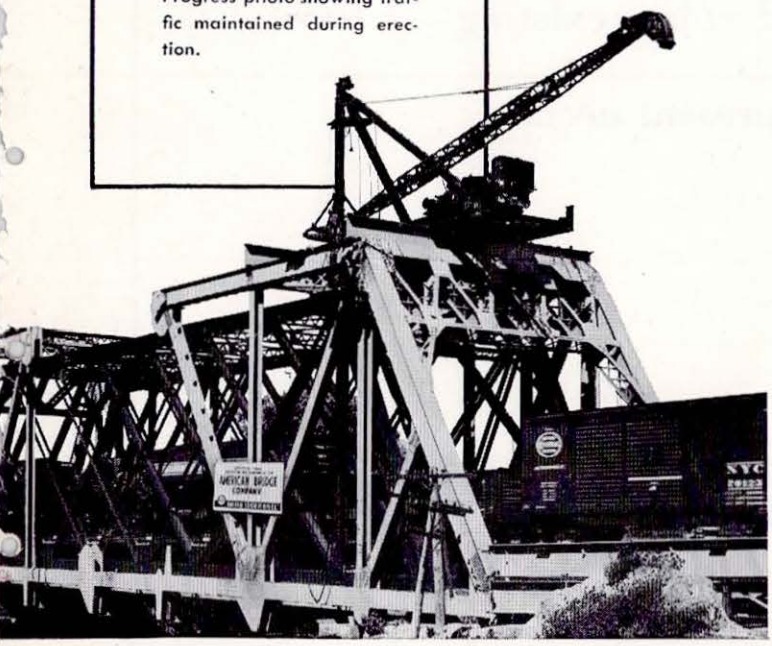
CAR BUILDERS TO AMERICA'S RAILROADS



View showing truss erection nearing completion. Erection was by locomotive crane and stiffleg derrick. Closure at center, top chord section was made by jacking at near end of trusses.

Bridge designed for Cooper's E-65 loading to current AREA Specifications. Estimated weight 600 tons.

Progress photo showing traffic maintained during erection.




# New bridge "swallows" old

Rail traffic was uninterrupted when American Bridge Company erected this 190′ double-track truss span around the old span across the Boyer River near Arion, Iowa.

In addition to designing, fabricating and erecting this and two other nearby bridges for Chicago and North Western Railway Company, American Bridge removed the three old spans.

We cite this project as further evidence that for fabrication and erection efficiently done, you can depend on American Bridge.

**AMERICAN BRIDGE COMPANY**
General Offices: Frick Building, Pittsburgh, Pa.
Contracting Offices in: BALTIMORE · BOSTON · CHICAGO · CINCINNATI · CLEVELAND
DENVER · DETROIT · DULUTH · MINNEAPOLIS · NEW YORK · PHILADELPHIA · ST. LOUIS
COLUMBIA STEEL COMPANY, San Francisco, Pacific Coast Distributors
UNITED STATES STEEL EXPORT COMPANY, NEW YORK

USS

# AMERICAN BRIDGE

UNITED STATES STEEL

# FROST TRUCK SPRING SNUBBERS

## PROTECT

## FREIGHT CARS—LADING

**Friction incorporated in suspension nests of freight cars by the use of Frost Snubbers, having either 1-5/8" or 2-1/2" travel, modernizes existing equipment to meet present needs.**

## THE FROST RAILWAY SUPPLY CO.

### DETROIT, MICH.

# HYATT'S Fifty-Seventh "Thank You" Note

AGAIN for the fifty-seventh year, all the folks at Hyatt say sincerely—"We thank you."

Here at Hyatt it is not our custom to think only of our customers at greeting time.

That "the customer is boss" is constantly kept before our four thousand workers every working day.

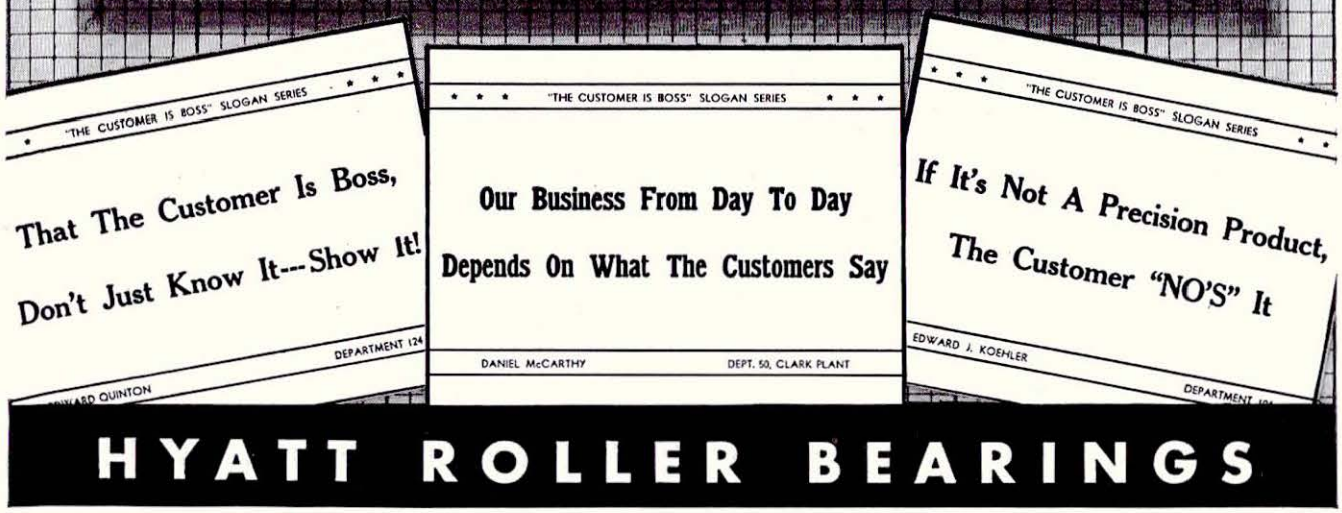
Witness the slogans, some of which are reproduced here, contributed by Hyatt employees.

With this spirit prevailing, it is natural that every Hyatt man and woman is imbued with a desire to make Hyatt Roller Bearings precisely accurate, dependable and long-lasting.

Hyatt has a long and unequalled experience as specialists in roller bearings. Our design engineers, laboratory technicians, backed by modern machines, manned by skilled operators, show the way in serving old and new Hyatt friends.

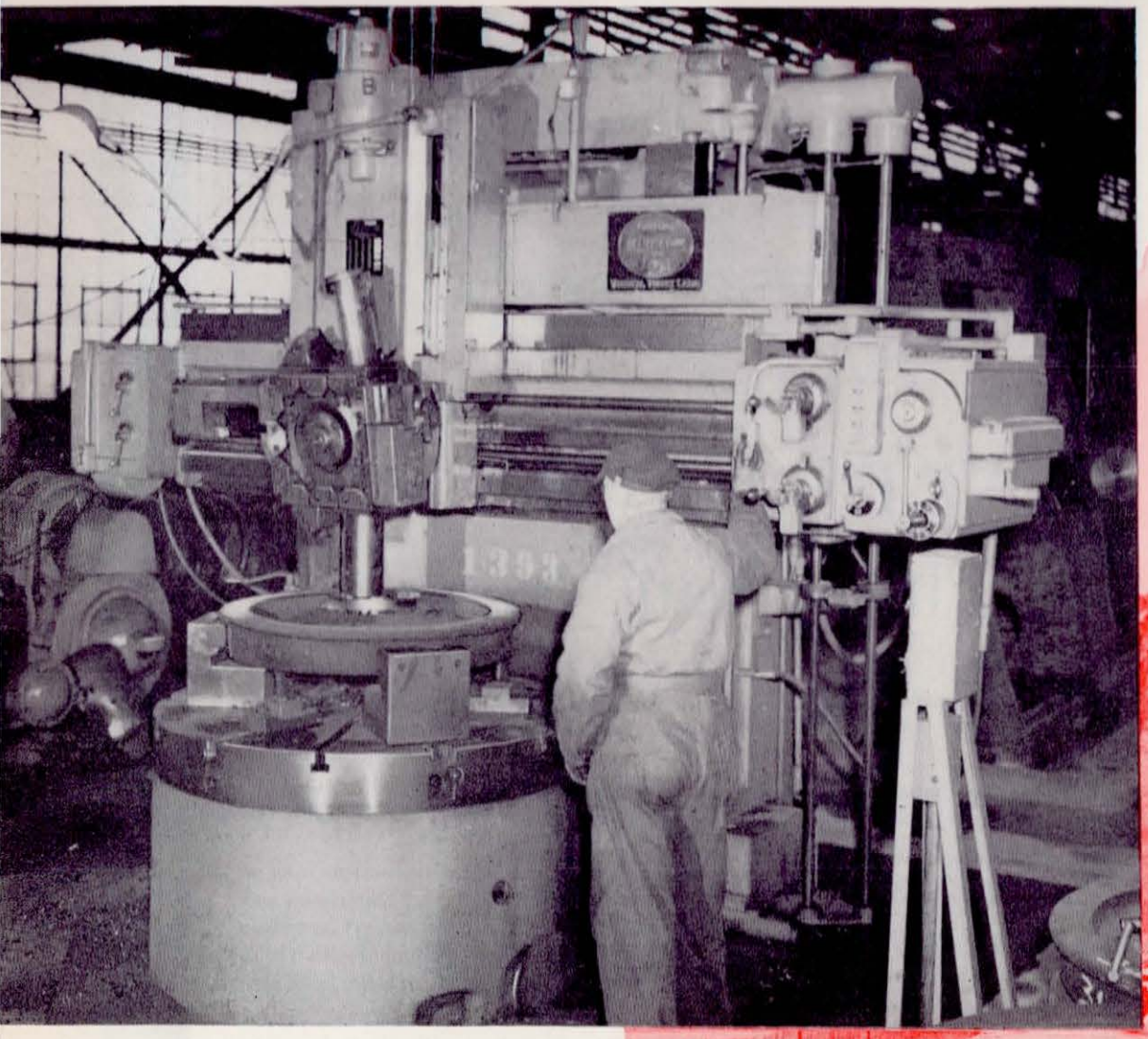
You just can't stay in business as long as Hyatt has without always looking ahead and giving workers the highest quality materials and the most modern equipment with which to produce the finest grade of roller bearings.

Our objective for 1949, as always, is your complete satisfaction with Hyatt bearings and service. Hyatt Bearings Division, General Motors Corporation, Harrison, New Jersey; Chicago; Detroit; Pittsburgh; and Oakland, California.


"THE CUSTOMER IS BOSS" SLOGAN SERIES
That The Customer Is Boss,
Don't Just Know It---Show It!
DEPARTMENT 124
"THE CUSTOMER IS BOSS" SLOGAN SERIES
Our Business From Day To Day
Depends On What The Customers Say
DANIEL McCARTHY
DEPT. 50, CLARK PLANT
"THE CUSTOMER IS BOSS" SLOGAN SERIES
If It's Not A Precision Product,
The Customer "NO'S" It
EDWARD J. KOEHLER

**HYATT ROLLER BEARINGS**

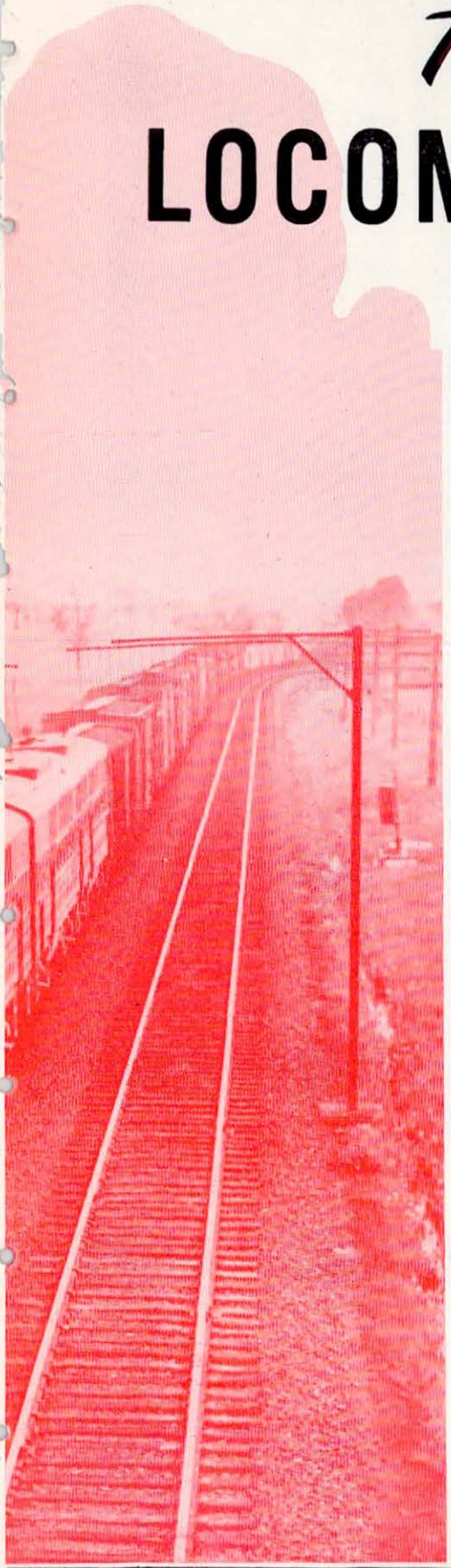
# MAN-AU-TROL *Triples*



Starting the first operation on a Diesel wheel, the operator presses the starting button. Thereafter, the Man-Au-Trol control at his right takes over the positioning and feed of each tool in sequence.

# THE BULLARD

# DIESEL WHEEL OUTPUT *to Protect* LOCOMOTIVE SERVICE



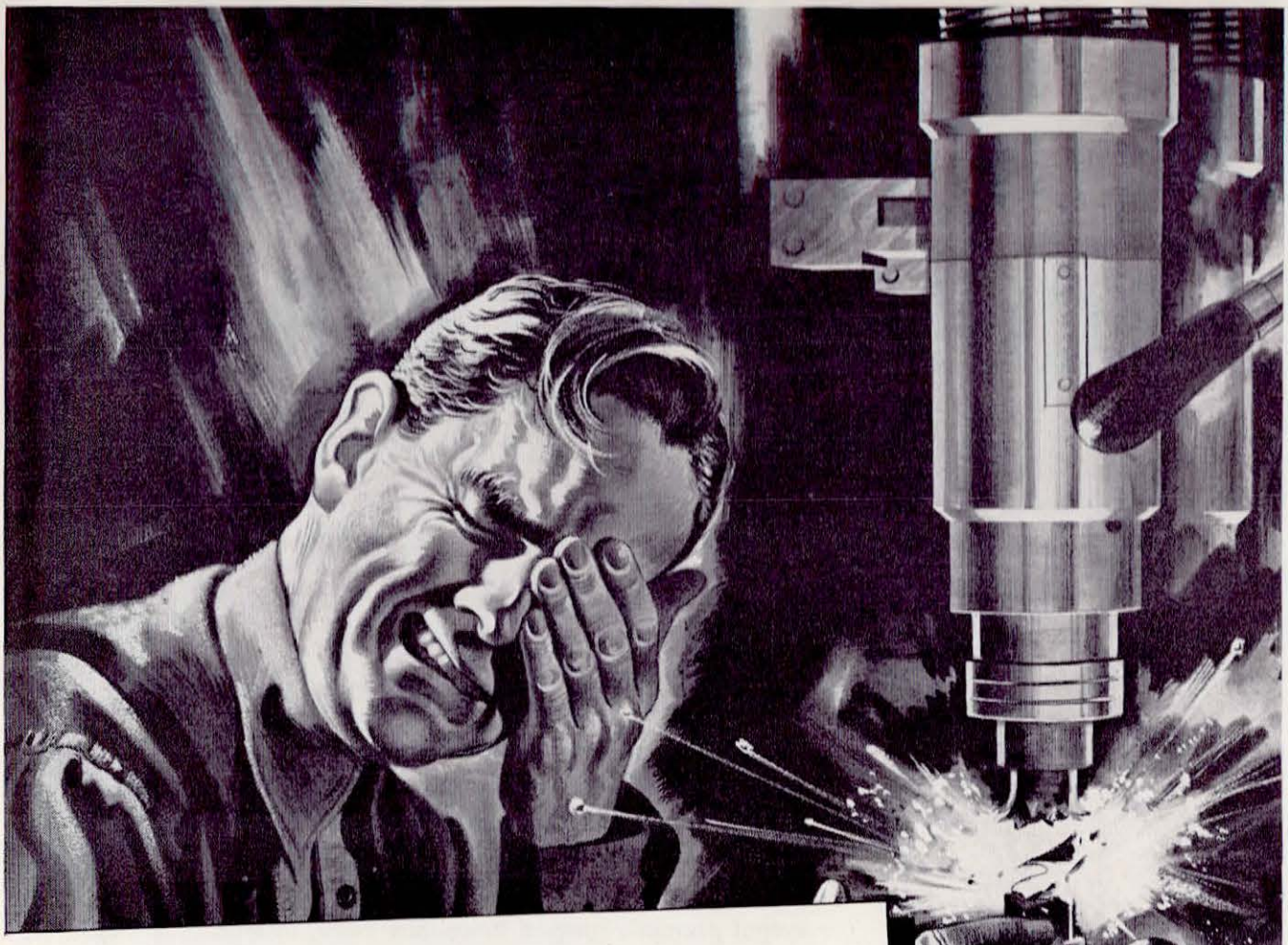
BULLARD

ONE extensively dieselized railroad had a hard problem. Although the shop had a modern boring and turning machine, it could not supply enough Diesel wheels to prevent costly locomotive tie-ups. So after careful consideration, a 54-inch BULLARD Man-Au-Trol Vertical Turret Lathe was installed. Wheel output promptly jumped three-fold! Now, instead of the old time of about three hours, the Man-Au-Trol averages about an hour per wheel, from floor to floor. No more Diesel wheel shortage for that road; busy locomotives get back to work in less time.

The Man-Au-Trol's "magic brain", which performs as many as 39 separate operations without attention, is the reason for the machine's speed as well as greater accuracy. A big time and money saver on production jobs, the Man-Au-Trol is adaptable to a wide variety of work—even single pieces—for the automatic feature may be disengaged at any point and manual control substituted.

Get the details about Man-Au-Trol Vertical Turret Lathes and the experiences of satisfied users. Write BULLARD today.

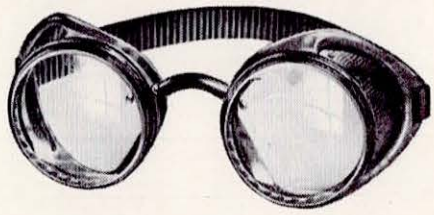
**COMPANY** BRIDGEPORT 2, CONNECTICUT



# HERE'S A BIG EXPENSE YOU CAN CONTROL

## Industrial Eye Accident Costs UP 78½%
OVER 1939 COSTS

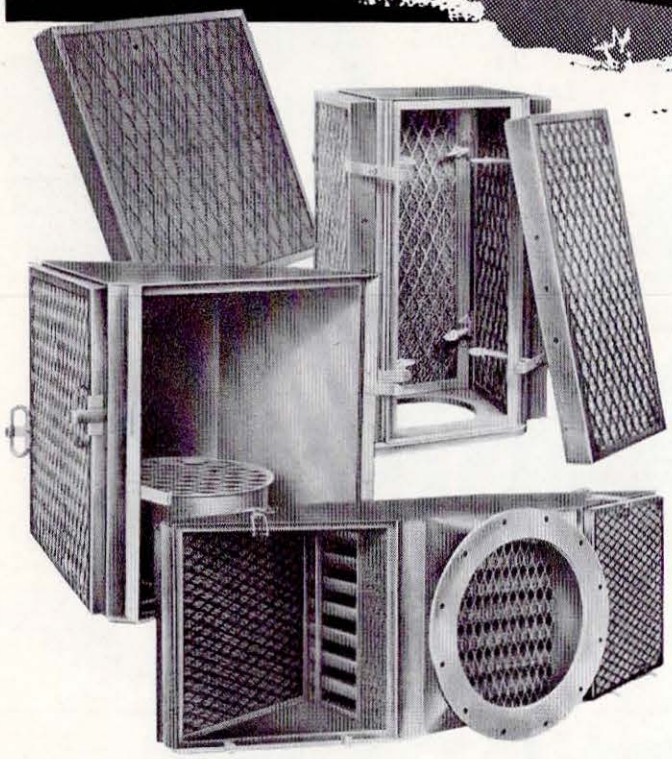
In these days of rising costs when you put a "tracer of lost profits" on your books, you may see that it isn't only the rising costs of raw materials and labor that eat into your net! Eye accidents throughout industry average more than $5 *per employed shop worker* per year. You can avoid the unnecessary costs of eye accidents (sometimes represented by 4-figure claims) by installing an adequate eye protection program. Your AO Safety Representative can show you how 98% of all eye accidents can be prevented by such a plan and *how large your savings can be!*



American Optical COMPANY — *Safety Division*

*Southbridge, Massachusetts • Offices in Principal Cities*

# FAR-AIR* FILTERS



Specialized FAR-AIR railroad filters

## *Performance Leader*

## in the Railroad Industry

Many of the major railroads in the country are standardizing on FAR-AIR Filters for diesel locomotive and car ventilation. Rigid field tests have proved that FAR-AIR's unique *herringbone-crimp* design and sturdy construction assure higher performance under the most severe operating conditions. Filter service is less frequent because of greater dirt-holding capacity and lower air flow resistance. Standardization of design insures that FAR-AIR Filter units are easily interchanged. "Free flushing" characteristics allow faster cleaning and cut maintenance time and costs.

***Among the users of Far-Air Filters are:***

ATCHISON, TOPEKA & SANTA FE RAILWAY CO.
BALTIMORE AND OHIO RAILROAD COMPANY
CHICAGO, MILWAUKEE, ST. PAUL & PACIFIC RAILWAY CO.
ILLINOIS CENTRAL RAILROAD
NEW YORK CENTRAL SYSTEM
SOUTHERN PACIFIC CO.
THE PENNSYLVANIA RAILROAD
UNION PACIFIC RAILROAD

Farr Engineers have designed an automatic filter washer and oiler unit which greatly reduces filter maintenance costs. The units presently in operation for some of the major lines have proved our performance claims. We will be glad to send complete information. Investigate this equipment now.

*herringbone-* **FAR-AIR FILTERS** *-corrugations*

"Better by Farr"

**FARR COMPANY** *Manufacturing Engineers*

**Los Angeles • Chicago • New York**

*Another*

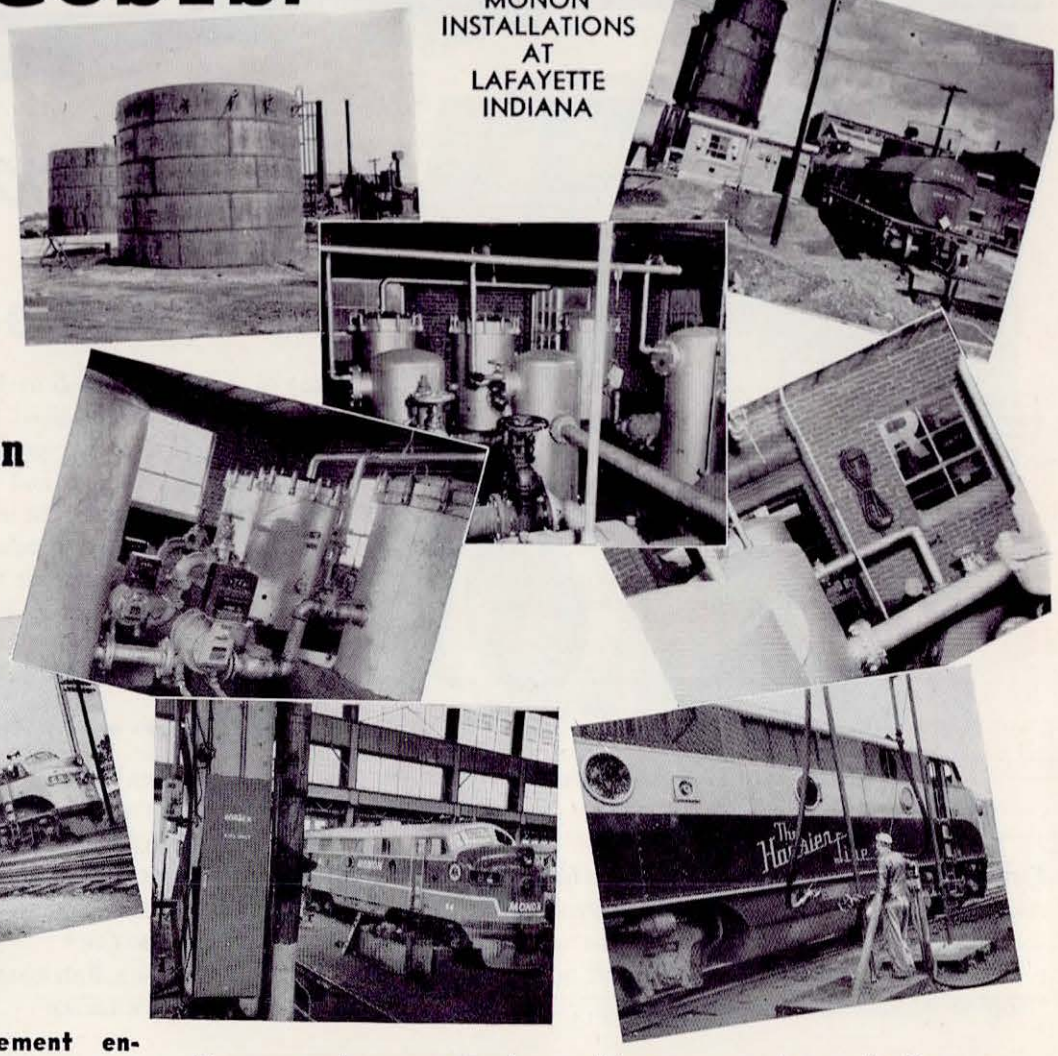
# Efficient Diesel Installation

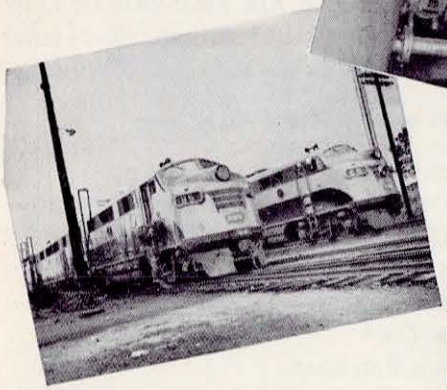
*in which* BOWSER ESTABLISHED 1885

# CUTS COSTS!

- Unloading
- Pumping
- Recording
- Storage
- Metering
- Filtering
- Refueling
- Fire Protection

PHOTOS FROM MONON INSTALLATIONS AT LAFAYETTE INDIANA









**Cost-minded management endorses Bowser equipment for speeding Diesel service and reducing maintenance. Fueling is faster—meters and ticket printers provide inventory control and unit cost accounting. Bowser filtering of fuel prevents excessive wear of costly equipment. Fog fire protection minimizes hazards.**

**Bowser systems are engineered to your requirements. Bowser railway representatives near you provide fast, friendly service on liquid handling or fire protection problems. Call on Bowser for qualified assistance.**

## BOWSER, INC.

*Liquid Control Specialists Since 1885*

**FORT WAYNE, INDIANA**

# HERE IS THE LIFETIME LID!

For the first time in railroad history, here is a journal box lid for your freight cars which, with routine care, will never need replacement. Less out-of-service time for busy rolling stock and substantial savings in maintenance costs are definitely possible with this lifetime journal box lid.

**LIFETIME DESIGN**—no hood to come off, no eyes to break off, no pin-hole elongation, no binding on the lug cam of the journal box. Designed for a lifetime of service.

**AAR APPROVED.** The outgrowth of years of research and experimentation by our engineers, working in close harmony with railroad mechanical men, the ALCOLID has been designed specifically to surpass stringent AAR and railroad requirements.

**ONLY TWO PARTS**—the lid itself and a retaining pin. The simplest, most dependable lid ever constructed. Of sturdy, full-section steel construction, the ALCOLID has no thin parts to rust away.

**LOCKED AGAINST VIBRATION.** A torsional spring exerting a full 50 pounds' pressure keeps the ALCOLID shut tight at all times. The square-headed retaining pin is held securely in place by a flanged hood ear bent over the pin head as an anvil. Locked against longitudinal movement, the pin cannot rotate—there can be no elongation of pin holes.

**NO BINDING.** The roller mounted on the spring forms a roller bearing which prevents wear on the lug cam of the journal box. The ALCOLID is as easy to open the thousandth time as it was when first installed.

**TIGHT SEATING ASSURED.** Of fully articulated construction, the ALCOLID assures tight seating on box face regardless of normal misalignment of pin holes—a feature which permits it to replace any type of traditional lid.

## ALCOLID*

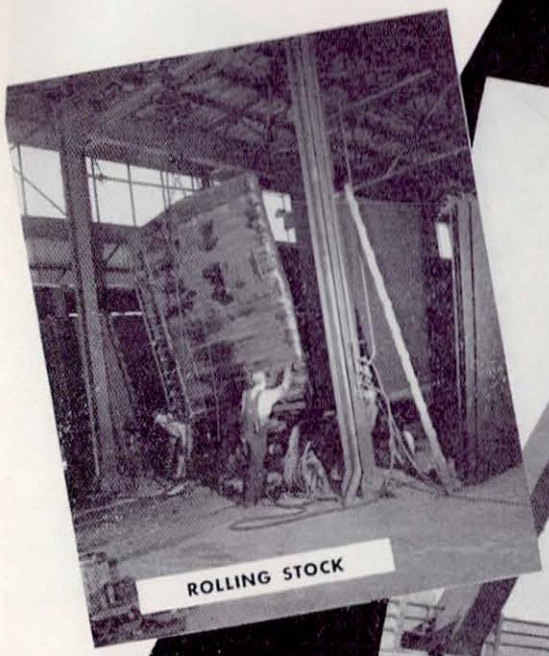
**Railway Steel Spring Division • American Locomotive Company**

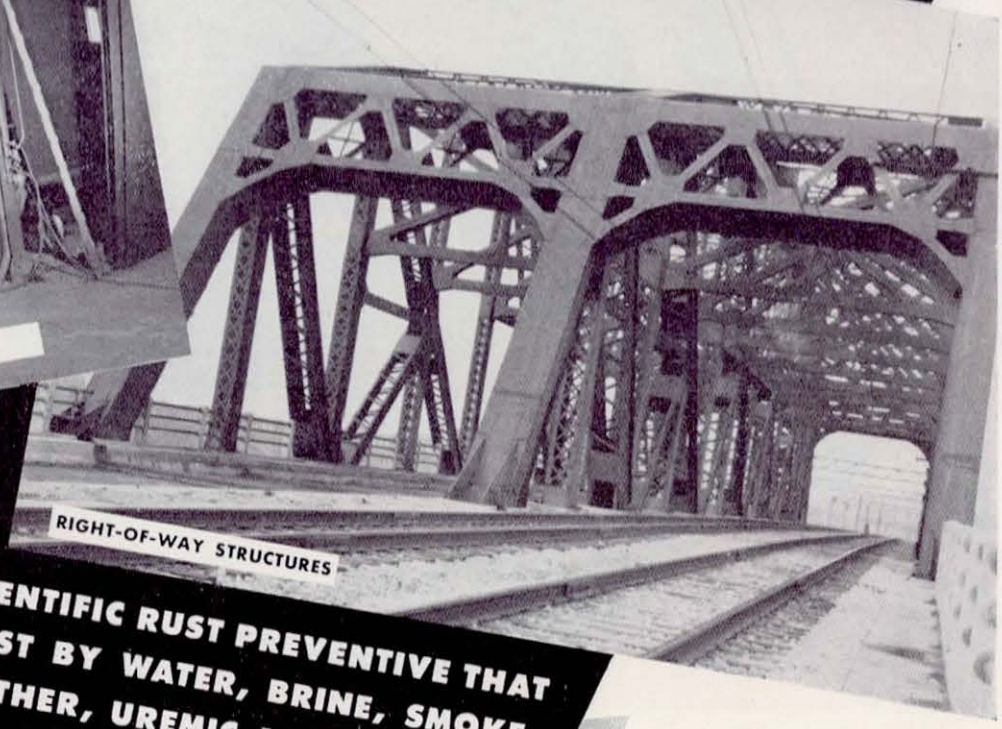
30 Church Street, New York 7, N. Y.

*Trademark registration applied for.

FOR GREATER OPERATING PROFITS . . .

# STOP RUST WITH RUST-OLEUM




**IT'S THE SCIENTIFIC RUST PREVENTIVE THAT CHECKS RUST BY WATER, BRINE, SMOKE, HEAT, WEATHER, UREMIC ACID, ETC.**

**HERE'S HOW RUST-OLEUM SAVES LABOR AND MONEY**

- **Less Preparation Time** No sandblasting, flame cleaning or chemical dissolvers are necessary. Merely wirebrush to remove rust scale, dirt, etc.
- **Rust-Oleum Goes on Faster** It saves 25% on application time and covers 30% more area per gallon. Excellent coverage, gallons of economy.
- **Enduring Protection** Rust-Oleum outlasts ordinary materials two to ten times on most jobs, depending on conditions, under which it's used.

**Easy to use...Lasting satisfaction. Apply by brush, dip or spray.**

Rust-Oleum Rust Preventives can help you to achieve greater net profits by a considerable reduction in the cost of maintenance of all rustable metal surfaces. Indoors or out—*wherever rust threatens*—Rust-Oleum cuts losses from rust. IT CAN BE APPLIED DIRECTLY OVER RUSTING METAL—by brush, dip or spray. It's tough, elastic, weatherproof!

The use of Rust-Oleum adds extra years of service to rolling stock, bridges, metal buildings, right-of-way structures, signal equipment, tanks, towers, etc. Rust-Oleum provides lasting protection for an average of ½ cent a square foot per coat material cost.

Get the facts NOW. Write today for Catalog No. 145

**RUST-OLEUM CORPORATION**

**2415 Oakton Street** **Evanston, Illinois**

# "Travel Tested" fabrics of luxury, beauty and durability mean lower maintenance for your new cars . . .

***New Family Coach*** on Chesapeake and Ohio has everything from "Mickey Mouse Theater" to diaper-changing room for young travelers. Goodall upholstery is a natural choice for this modern car.

## New C & O Coaches Feature Goodall Fabrics

No wonder Goodall Fabrics are selected by the C & O and other leading railroads. They are *Blended-for-Performance* to give superior service in every use. They wear longer, resist soil and abuse, clean easier and quicker. They are "travel tested" by use on America's finest railroads through the years. Goodall Fabrics are the result of this practical experience in weaving fabrics to give durable luxury that means lower maintenance costs.

***New Seating Arrangement.*** Goodall Fabrics are the upholstery feature of this new C & O Dome-Observation Coach. New Coach Lounge, shown below, also uses Goodall Fabrics upholstery to give luxurious comfort to each reclining seat.

Goodall-Fabrics INC.
Subsidiary of Goodall-Sanford, Inc.
THE FINEST NAME IN FABRICS

© 1949, Goodall-Sanford, Inc.

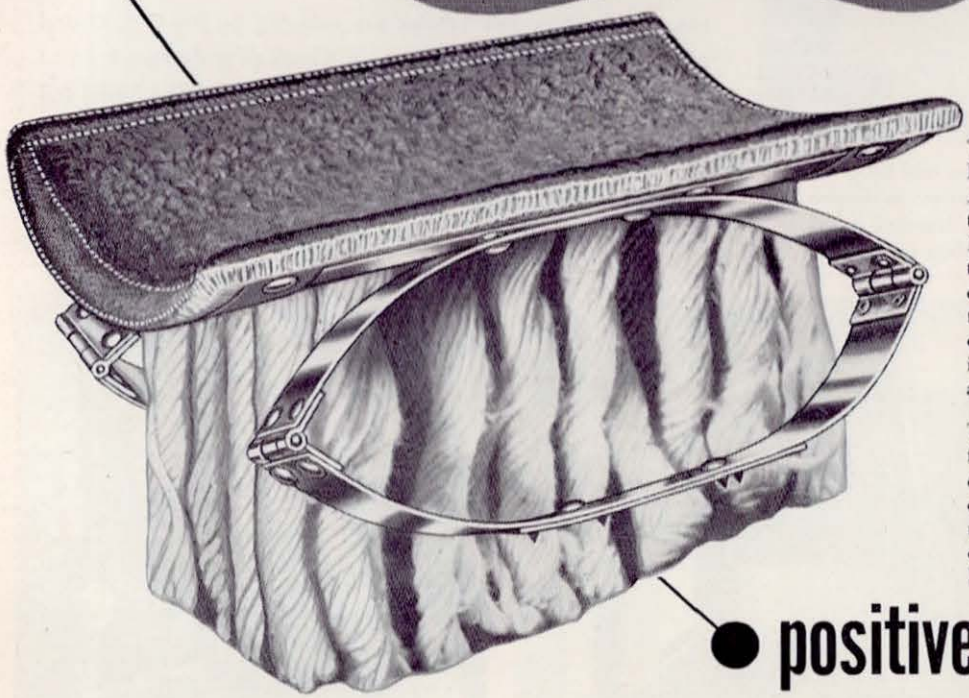
Sole Makers of World-Famous PALM BEACH* Cloth and Suits *Registered Trade Mark

**GOODALL FABRICS, INC.** NEW YORK • BOSTON • CHICAGO • DETROIT • SAN FRANCISCO • LOS ANGELES

# *Modern* MAGNUS BEARINGS *Improved*

## magnus spring pad lubricator

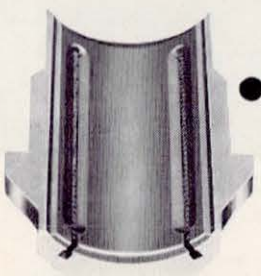
**type "RB"**



The Magnus Type "RB" Spring Pad Lubricator is easily inserted in the A.A.R. round bottom box and is easy to remove. The journal oil in the Magnus Spring Pad Lubricator climbs the absorbent fibers and feeds a continuous supply of oil to the Journal through anti-glaze material. The oil film between Journal and Bearing is positively maintained under all conditions of weather and speed.

The Magnus Lubricator acts like a filter. Dirt or other impurities cannot climb the vertical fibers which carry the oil, and dust or impurities naturally gravitate to the bottom of the Journal Box. There's no loose packing to cause "waste-grabs."

**positive, uniform oil feed**

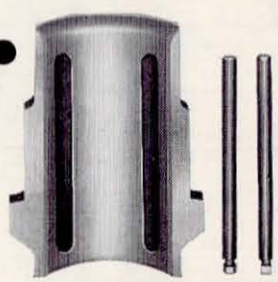


**"magsafe" satco-lined journal bearing**

This bearing complies with A.A.R. standards but is equipped with two "T" section brass "combs", which drop down and hug the journal at all times regardless of whether the journal is new or turned down to the limit of wear. The brass "combs" prevent lint and strands of waste from climbing the Journal, and assure uniform lubrication all the way across the journal. Oil stored in the bearing is available the instant the car starts to move.

**"twinplex" satco-lined alarm journal bearing**

A standard A.A.R. dimension bearing containing two brass tubes, each having a small orifice sealed with a fusible metal. At 350° F., one tube releases a penetrating odor, the other a dense white smoke, thus giving double warning of rising temperature in the Journal Box



SATCO Bearing Metal

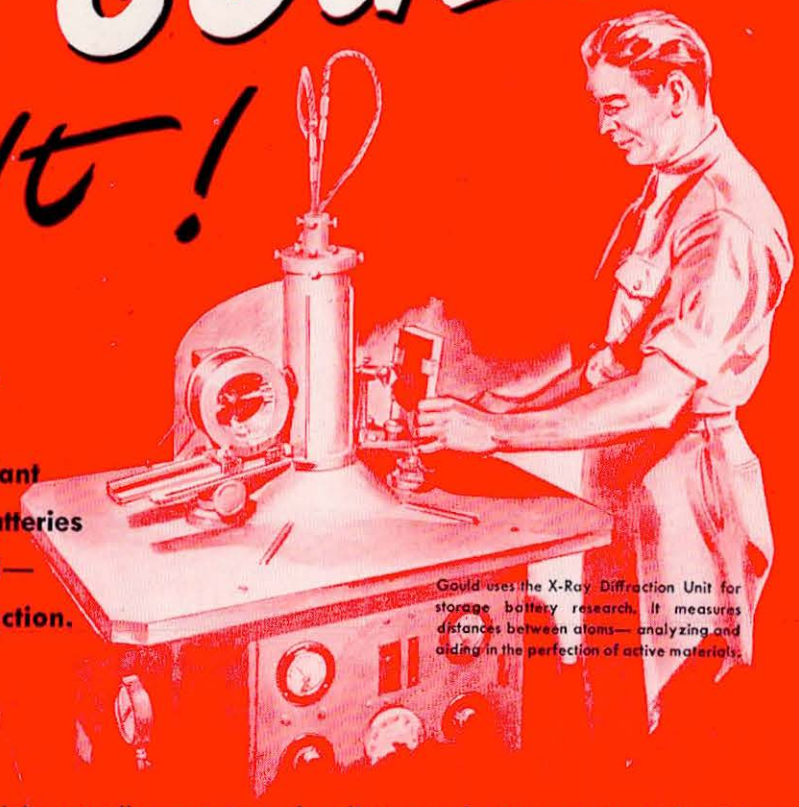
MODERN HEAVY DUTY BEARINGS

**MAGNUS METAL CORPORATION**

CHICAGO NEW YORK

# Only GOULD Has It!

**A modern research laboratory with pilot manufacturing plant where advance-design batteries are constantly created— and proved before production.**



Gould uses the X-Ray Diffraction Unit for storage battery research. It measures distances between atoms— analyzing and aiding in the perfection of active materials.

The X-Ray Diffraction Unit actually measures the distances between atoms. It gives fast, accurate qualitative analyses of complicated metallic compounds, gives Gould complete control over the purity of active materials and is revealing new relationships between molecular activity and battery characteristics. That's why Gould batteries give predictable performance and longer life . . . why every Gould battery is packed with the most active power-producing material available today.

Specify GOULD—FOR FIFTY YEARS THE CHOICE OF ENGINEERS.

The Gould "Thirty"—America's Finest Industrial Truck Battery!

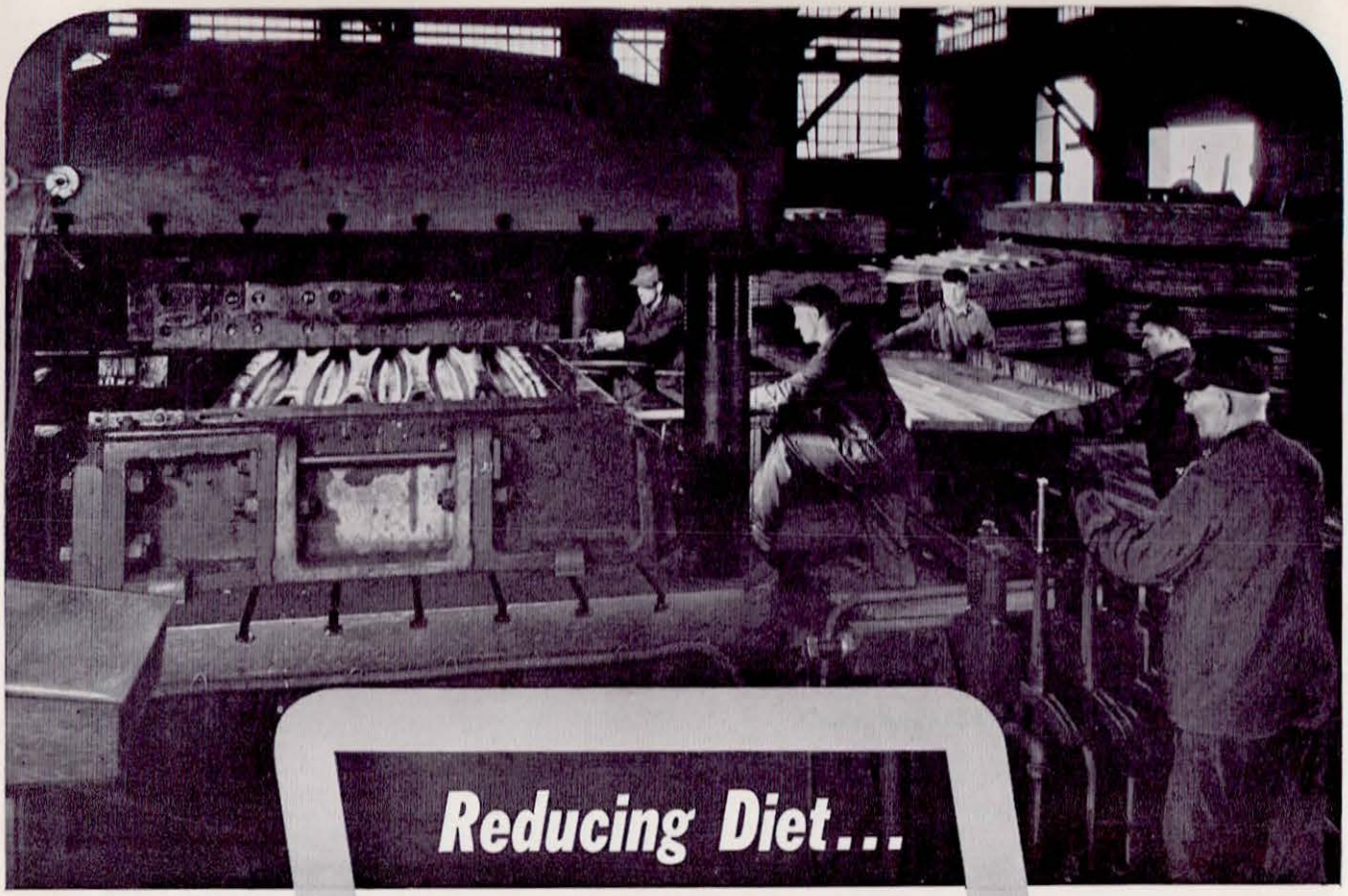
# GOULD

**STORAGE BATTERY CORPORATION**

Including the Storage Battery Division of Philco Corporation

TRENTON 7, NEW JERSEY

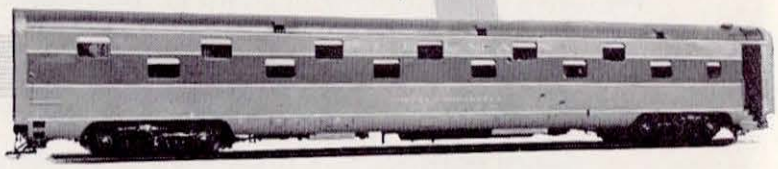
*Always Use Gould Automobile and Truck Batteries*



Box car ends are swiftly stamped out of this easy-to-work nickel alloy steel, as shown above. Weight of standard railroad freight cars may be reduced as much as 5 tons by designing to utilize fully the high strength/weight ratio of "Hi-Steel," an economical, nickel alloyed product of Inland Steel Company, Chicago 3, Ill. This high strength low alloy steel containing nickel resists shock, abrasion and corrosion.

# Reducing Diet...

# FOR ROLLING STOCK



This duplex roomette car built by Pullman-Standard does more than offer new comfort and convenience to passengers . . . it proves that "Cor-Ten," a high strength low alloy nickel steel produced by Carnegie Illinois Steel Corp., Pittsburgh 30, Pa., permits substantial weight reduction. This car's performance verifies that smooth riding can be attained without heavy equipment.

Don't add deadweight to strengthen rolling stock.

Reduce your track maintenance expense, and increase revenue per ton mile . . . by using relatively lightweight cars built of high strength, low alloy steels containing nickel.

Thin light sections of these steels provide the same strength and ruggedness as thicker, heavier sections of plain carbon steel. Moreover, the nickel steels resist shock, abrasion and corrosion . . . thus extending equipment life. In addition, they respond well to various fabricating methods.

Produced under various trade names by leading steel companies, high strength steels containing nickel along with other alloying elements, meet exacting demands where weight saving and durability are required. Consult us on their use in products or equipment. Write today.

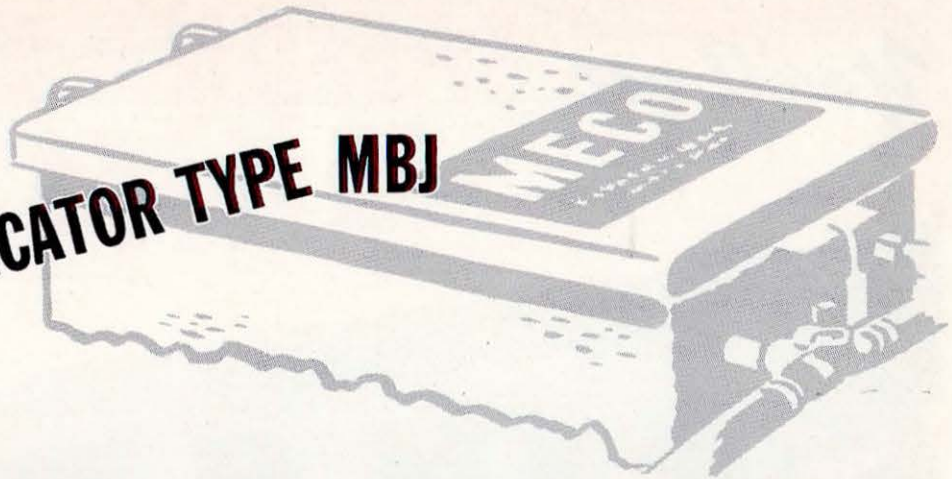
EMBLEM OF INCO SERVICE

Over the years, International Nickel has accumulated a fund of useful information on the properties, treatment, fabrication and performance of engineering alloy steels, stainless steels, cast irons, brasses, bronzes, nickel silver, cupro-nickel and other alloys containing nickel. This information is yours for the asking. Write for "List A" of available publications.

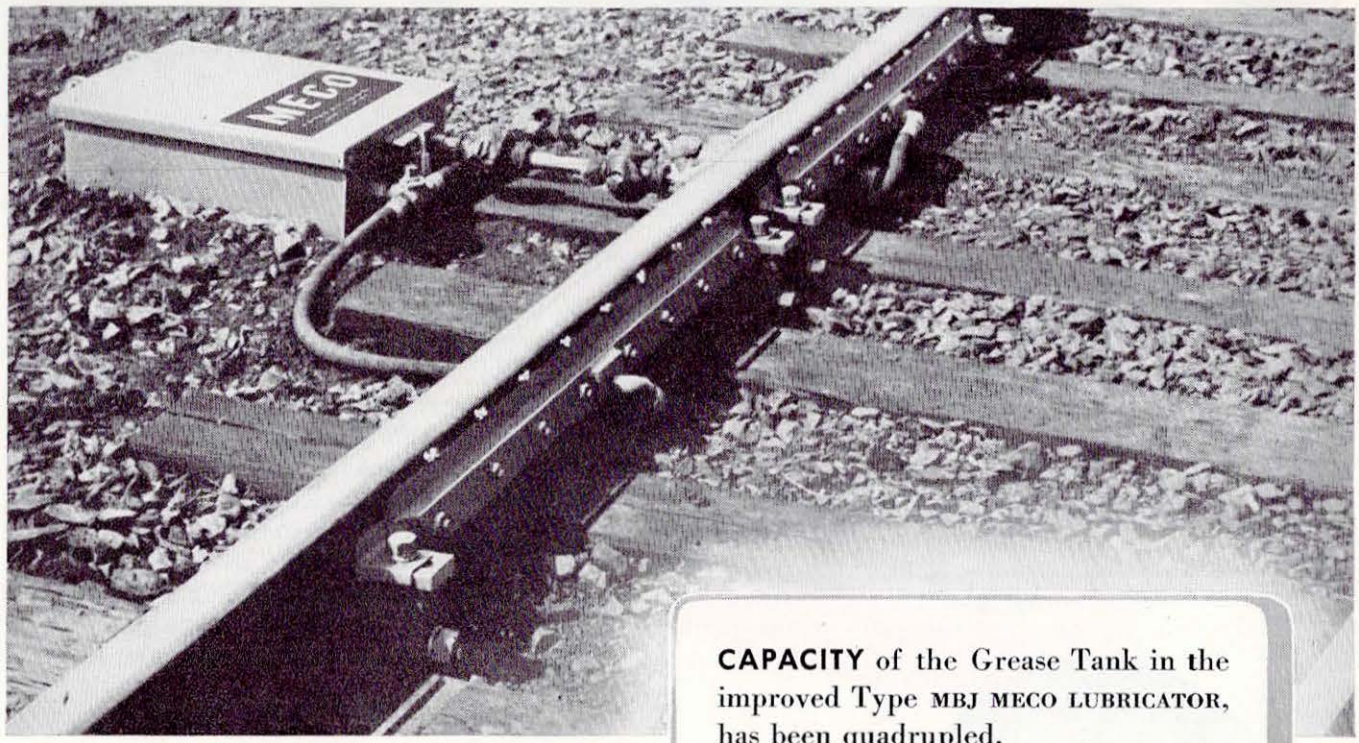
## THE INTERNATIONAL NICKEL COMPANY, INC.

67 WALL STREET
NEW YORK 5, N. Y.

# MECO LUBRICATOR TYPE MBJ




# CAPACITY




**CAPACITY** of the Grease Tank in the improved Type MBJ MECO LUBRICATOR, has been quadrupled.

## ONE TANK FILLING LASTS FOUR TIMES AS LONG

Lubricant passages are machined throughout, resulting in ample and uniform flow of rail and flange lubricant.

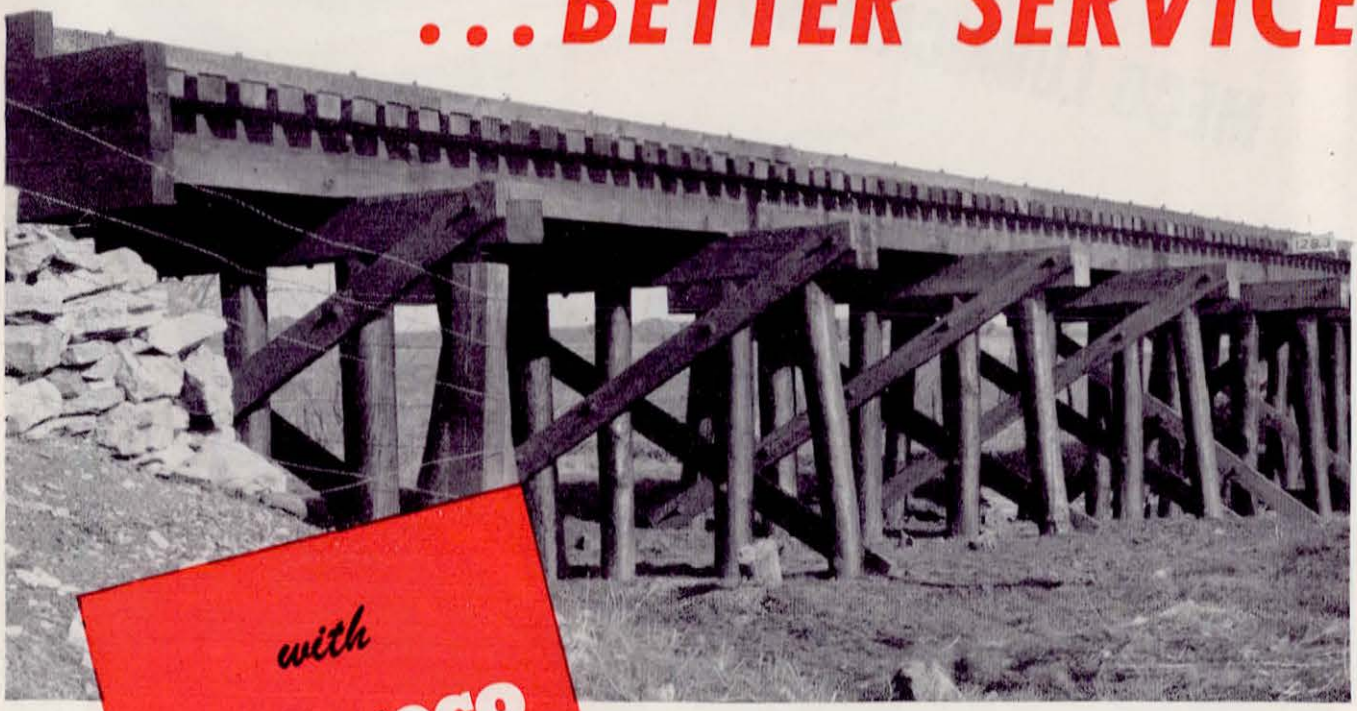
Ample greasing capacity for application on larger rail sections.

**★ Maintenance Equipment Company ★**

RAILWAY EXCHANGE BUILDING • CHICAGO 4, ILLINOIS

3084

# You'll get SPEEDIER ERECTION ...BETTER SERVICE



*with*

## Amcreco Creosoted FRAMED BRIDGE TIMBERS

Adzed and Bored Cross Ties

Bridge Ties

Piles

Timbers

You benefit two ways when you use Amcreco Framed Bridge Timbers—preframing speeds building and saves labor... Amcreco Creosoting Methods assure long life and low maintenance. Long experience in supplying a wide variety of creosoted products for the nation's railroads eminently qualifies Amcreco as a reliable source. Amcreco's engineers are always at your service to aid in solving trestle problems as well as any problem related to the application of creosoted products. Plan now to take advantage of this helpful service. There is no obligation of course.

AMERICAN CREOSOTING COMPANY
INCORPORATED

COLONIAL CREOSOTING COMPANY INCORPORATED

AMCREO LOWRY PROCESS CREOSOTED WOOD

GEORGIA CREOSOTING COMPANY INCORPORATED

LOUISVILLE, KENTUCKY

**AMCRECO Lowry Process CREOSOTED PRODUCTS**

*Pressure treated for strength that lasts!*

# "STAINLESS STEEL cuts our replacement costs..."

*—say railroad executives*

*Modern passenger equipment make full use of stainless steel's durability and beauty for luggage racks, seat pedestals, hardware, window frames, weather-stripping, flashing, kick plates and decorative trim.*

Enthusiastic comments by actual users are convincing evidence of the substantial savings in replacement costs which follow the selection of ENDURO Stainless Steel for passenger equipment.

Because ENDURO belongs to the alloy steel family—toughest of metals—it is unsurpassed for strength and durability . . . is high in resistance to impact and fatigue. Its hard, long-lasting surface defies daily wear, and offers top resistance to rust and corrosion.

Add the facts that stainless steel never requires painting or refinishing . . . retains its passenger-attracting sparkle indefinitely . . . is easy to clean and keep clean . . . cuts deadweight without loss of vital strength . . . and its easy to see why more and more roads are specifying ENDURO on new equipment orders. For detailed information—interesting facts and figures—write to:

**REPUBLIC STEEL CORPORATION**
*Alloy Steel Division • Massillon, Ohio*
**GENERAL OFFICES • CLEVELAND 1, OHIO**
Export Department: Chrysler Building, New York 17, New York

REPUBLIC STEEL
REG. U. S. PAT. OFF.

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**STAINLESS STEEL**

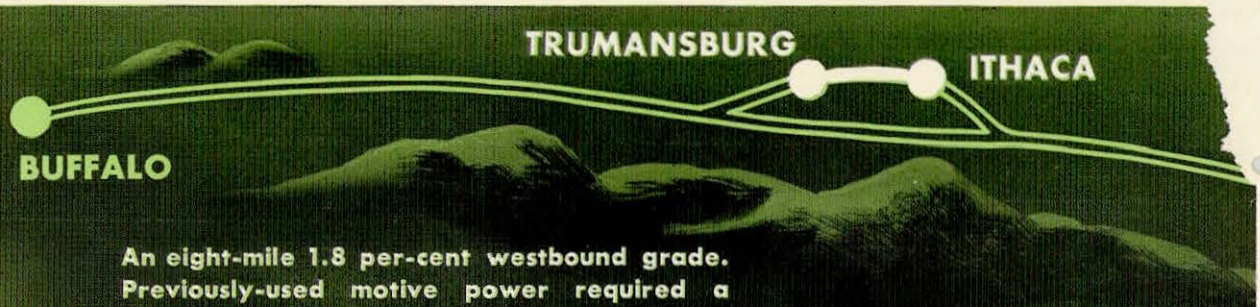
**RESISTANT TO RUST AND CORROSION • RESISTANT TO HEAT • HIGH IN STRENGTH • EASY TO FABRICATE**
**EASY TO CLEAN • FREE FROM CONTAMINATION • EYE APPEALING • LONG LASTING • LOW ULTIMATE COST**

**A PRODUCT OF REPUBLIC STEEL**

# ON THE LEHIGH VALLEY

# "Takes The Top Off The Mountain"

"Our new Alco-G.E. passenger locomotives take the top right off the mountain," says C. L. Patterson, Vice President in Charge of Operations, Lehigh Valley Railroad. "They handle our railroad's toughest




An eight-mile 1.8 per-cent westbound grade. Previously-used motive power required a helper to haul more than a 613-ton, eight-car train up this grade. Alco-G.E. diesel-electrics currently haul the fifteen-car, 1150-ton "Black Diamond" without help.

# AMERICAN LOCOMOTIVE

jobs exclusively in less time, do more work, at considerably lower operating costs."

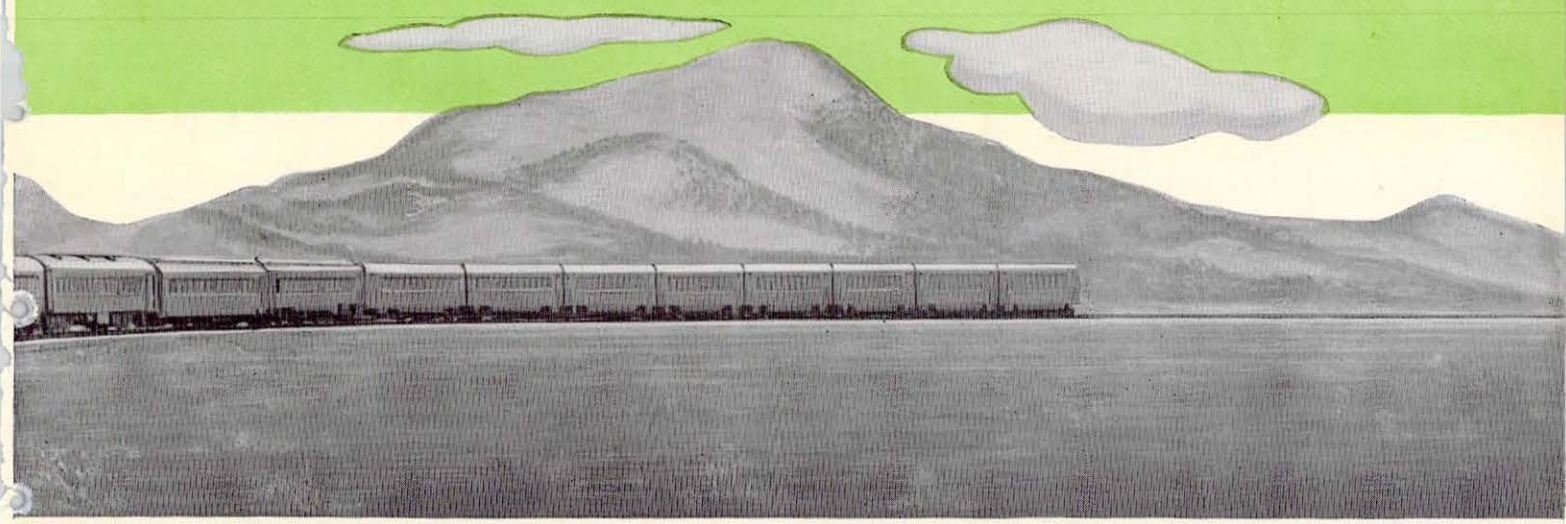
Toughest of these assignments involves eight to thirteen-mile grades of as much as 1.8 per cent near Wilkes-Barre and Ithaca. On these grades, without helpers, Alco-G.E. diesel-electrics are able to haul twice as many passenger cars as replaced motive power. Costly helper service has been eliminated on passenger runs. Passenger schedules between New York and Buffalo have been reduced forty-five minutes each way, with improved on-time performance. This service includes the run of the famed "Black Diamond."

When the Alco-G.E. Survey Service was called in to make a motive-power study of this operation, it predicted substantial savings. "The survey was conservative," says Mr. Patterson, "Operating costs *alone* are down two-thirds."

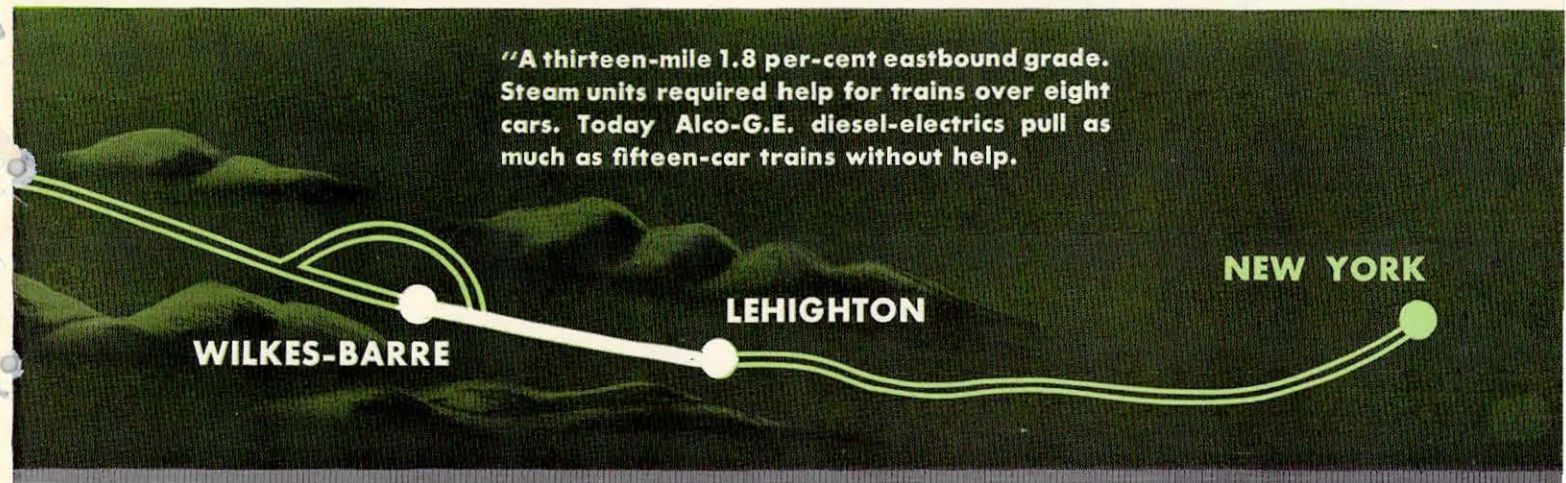
So successful has this Alco-G.E. passenger operation been that the Lehigh Valley will soon put Alco-G.E. units to work on the railroad's toughest freight jobs too.

Such results are tangible evidence of motive-power performance at its best. *Alco-G.E. locomotives move the heaviest loads on fast schedules over the toughest profiles on one road after another.* These same results can be duplicated in your operation. Your Alco-G.E. representative will gladly tell you how.

## *Built* TO DO YOUR RAILROAD'S TOUGHEST JOB



"A thirteen-mile 1.8 per-cent eastbound grade. Steam units required help for trains over eight cars. Today Alco-G.E. diesel-electrics pull as much as fifteen-car trains without help.



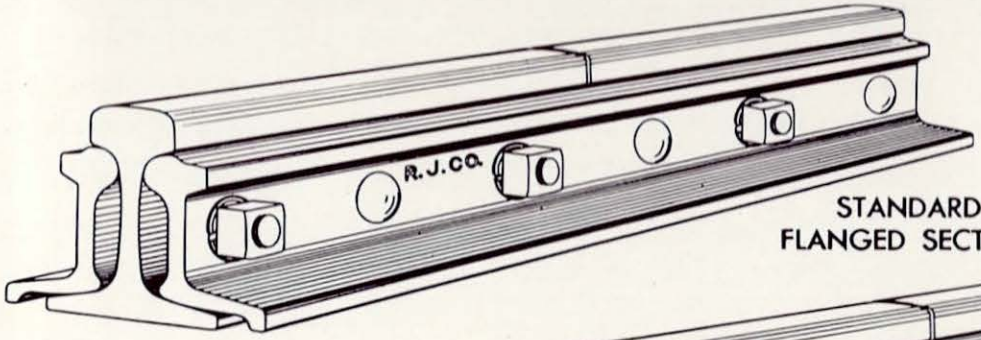

IN CANADA Alco GE IS MLW GE

# and GENERAL ELECTRIC

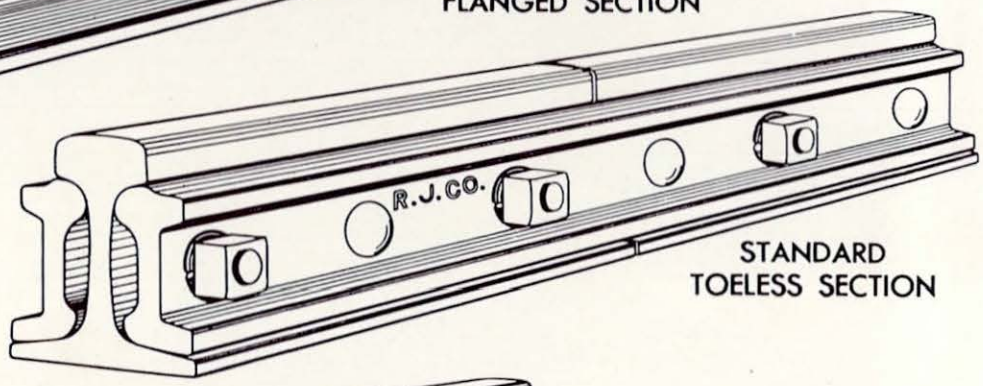
113-224

# *The Best in* RAIL JOINTS

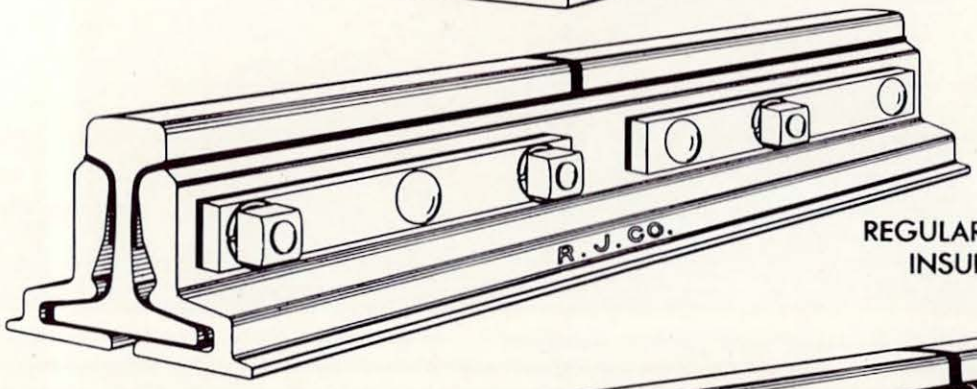
## *INSURES LONGER RAIL LIFE*



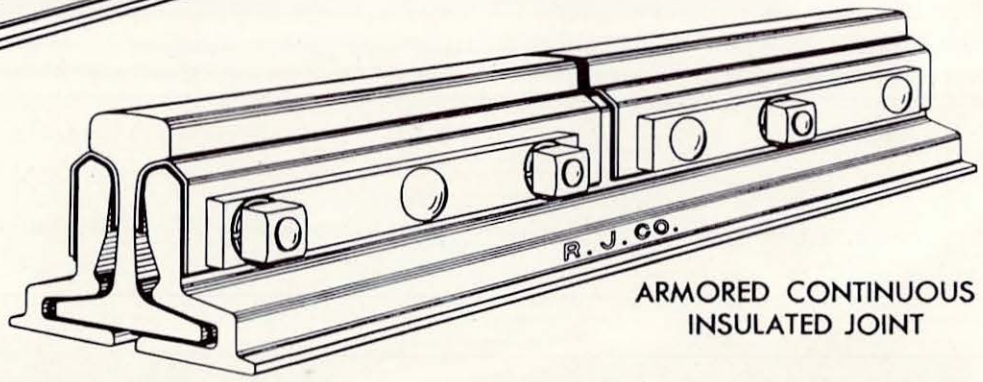

STANDARD
FLANGED SECTION




STANDARD
TOELESS SECTION




REGULAR CONTINUOUS
INSULATED JOINT




ARMORED CONTINUOUS
INSULATED JOINT

**THE RAIL JOINT COMPANY Inc.**

**50 CHURCH ST. NEW YORK 7, N. Y.**

# MET-L-WOOD

METAL BONDED TO PLYWOOD

## . . . working with the railroads since 1925 to reduce dead weight in cars and locomotives

More and more MET-L-WOOD is in use for

**Diesel Locomotives**

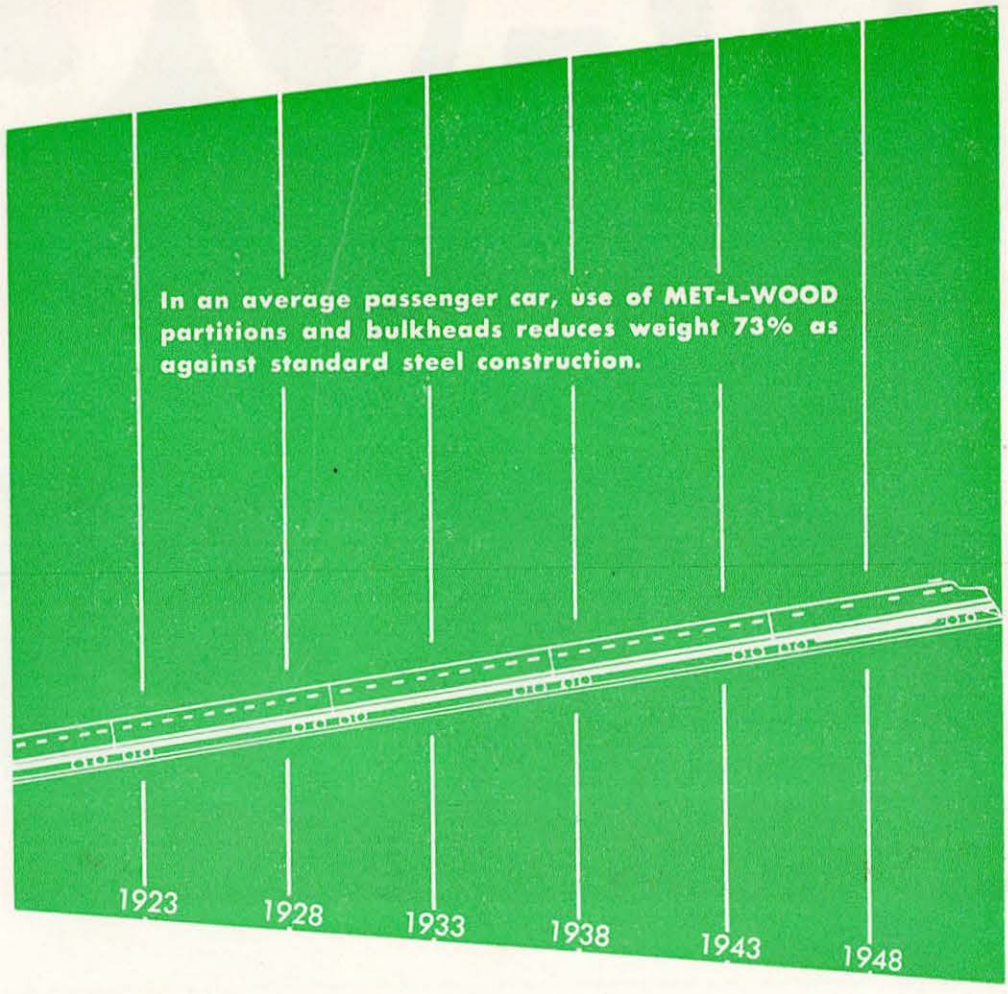
sheathing
doors

**Baggage Cars**

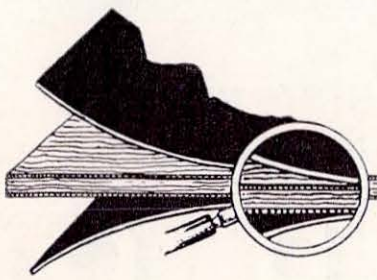
doors

**Passenger Cars**

panels
bulkheads
partitions
doors
heading
wainscoting
luggage shelves
cabinets
table tops



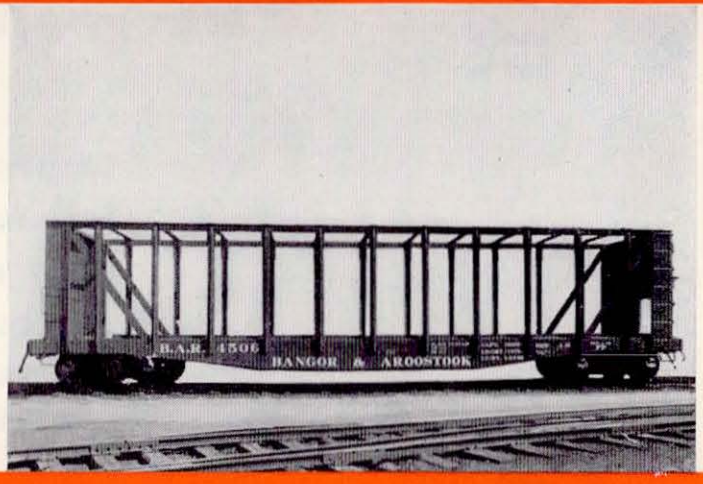

**Improves appearance**
**Increases longevity**
**Cuts cleaning costs**
**Saves maintenance**
**Helps lower center of gravity**



**MET-L-WOOD CORPORATION**

*6755 West 65th Street, Chicago 38, Illinois*

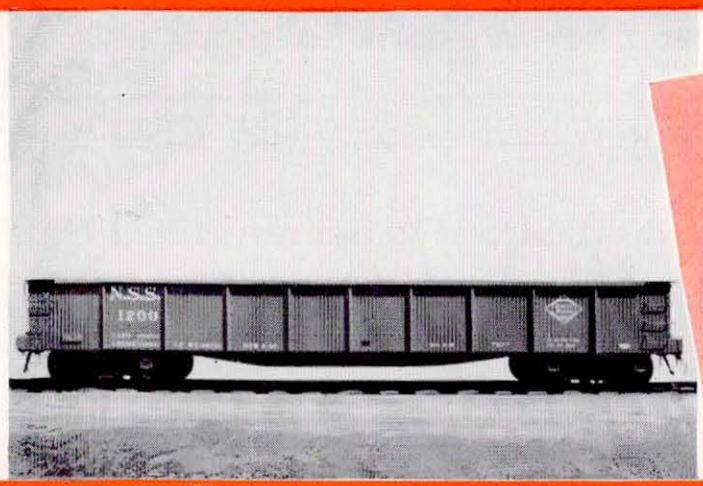
# MAGOR




**Built right, Magor revenue producers give long reliable service and low maintenance.**

# MAGOR CAR CO

# DEPENDABLE
# FREIGHT CARS
☆ ☆ ☆
# AUTOMATIC AIR DUMP CARS

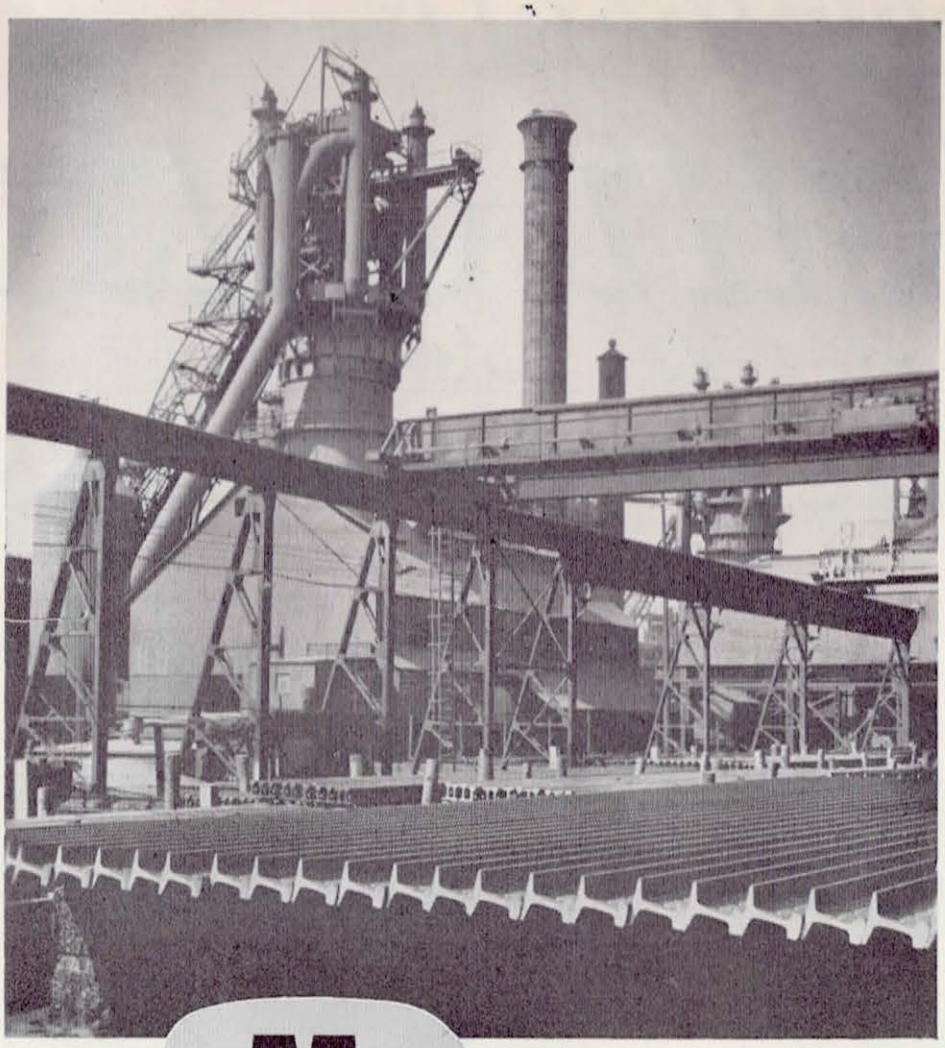


With forty-six years experience in design and construction, Magor Car Corporation stands ready to cooperate with American railroads in freight car building programs.

# RPORATION

50 Church Street

New York 7, N.Y.



# MAKING TRACKS IN '49

Commitments for Western Railroads in 1949 will again have priority with CF&I as it continues its efforts to deliver its mill capacity of *quality* rails and accessories.

**The Colorado Fuel and Iron Corporation**

GENERAL OFFICES: DENVER, COLORADO

# POSITIVE BRAKE BEAM

TRADE MARK

*with*
***Strap Tension Member***

**SUPERIOR IN DESIGN**

**RELIABLE IN PERFORMANCE**

Strap upset where rivet passes through the assembly providing increased cross sectional area.

*In service or on order from ~~37~~ 56 railroads and private car lines*

**CHICAGO RAILWAY EQUIPMENT CO.**

**McCormick Building, Chicago**

# How to save 50% on

## USE MACHINE POWER

Mechanized track maintenance is recognized as "the fastest moving trend in railroading today." These powerful track cribbers and ballasters are in the forefront of that trend.

This revolutionary power cribber does the work of large crews with hand tools, in removing fouled and compacted ballast from between the ties preparatory to resurfacing the track. It cleans out each crib uniformly, at a rate far beyond that possible with any previous means, at any comparable cost. It operates effectively in all types of ballast, in all track conditions, day or night. Four lateral wheels permit removal from track under its own power in less than five minutes.

Write for analysis comparing cost with gang operations under varied track, ballast, and traffic conditions.

## PULLMAN-STANDARD POWER TRACK CRIBBER

**PULLMAN-STANDARD POWER TRACK CRIBBER IN POSITION ON TRACK**

Close-up shows digger bars, with "impact" bars preparing the crib ahead. Diggers contact the ballast serially, moving the ballast progressively from track center to ends of crib. Depth of digging may be varied for different track conditions and heights of rail.

# *Roadbed Maintenance Costs*

## TO SAVE MAN POWER!

Like the cribber, this power ballaster greatly increases the production of maintenance gangs. Its output of uniformly ballasted track is faster, better, and cheaper than that of previous methods of track improvement. Performance is uniform, regardless of track raise or ballast conditions. In one on-line experience, for example, results over an extended period showed that this machine enabled one gang (enlarged by only 50%) to *triple* its daily production, cutting maintenance costs *in half*. Other tests under all conditions have produced similar benefits. These figures also are available for your study. Write for them, today.

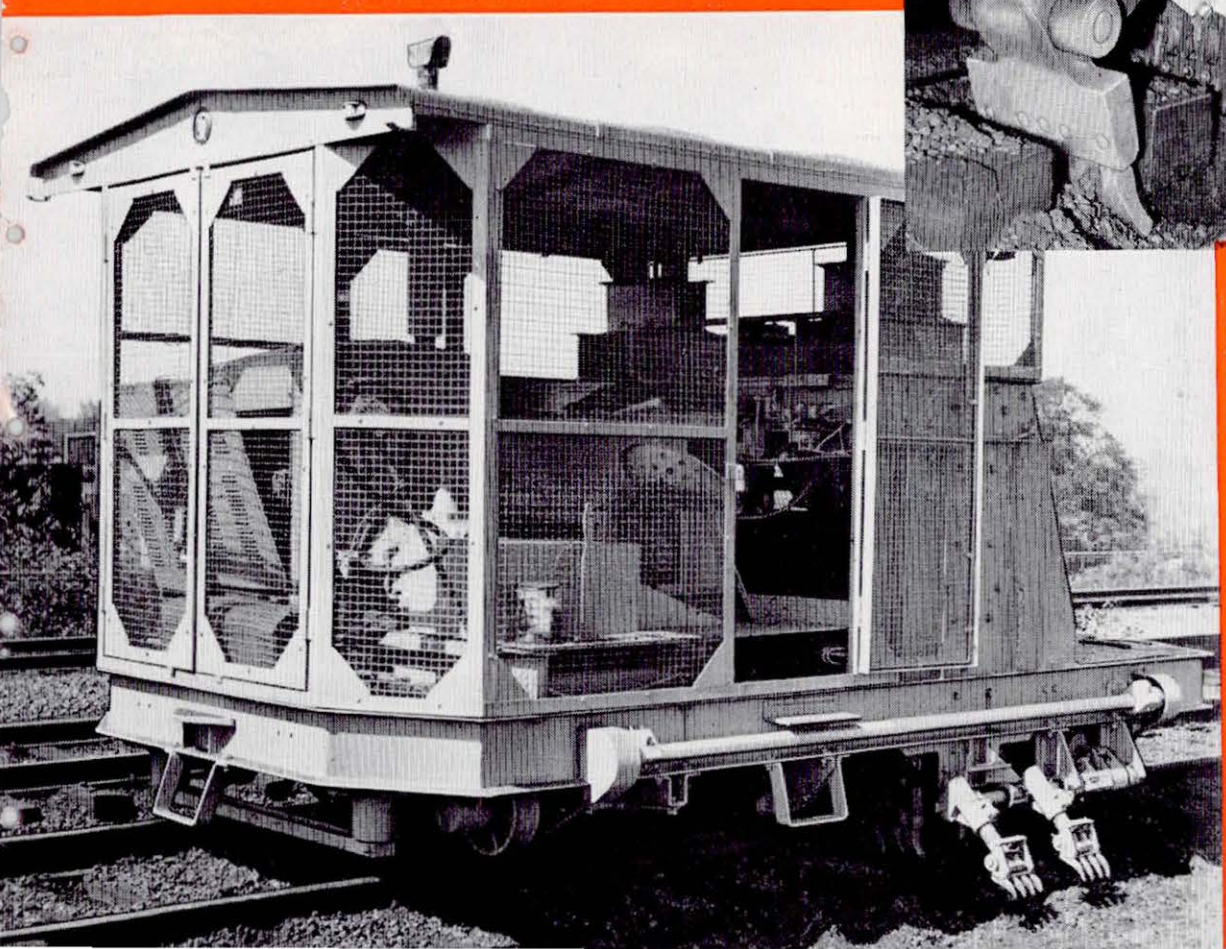
**PULLMAN-STANDARD POWER BALLASTER**

# Pullman-Standard

**CAR MANUFACTURING COMPANY**

*Power Ballaster Division*

CHICAGO • NEW YORK • CLEVELAND • WASHINGTON, D. C. • PITTSBURGH • BIRMINGHAM
WORCESTER, MASS. • *SAN FRANCISCO SALES REPRESENTATIVE: MARK NOBLE*



**PULLMAN-STANDARD POWER BALLASTER ON TRACK**

The detail view shows tamping shoes at low position along the tie base. Ballast feed shoes are in extended position; these work the loose ballast back into position between the ties. Like the cribber, this power ballaster can be removed from the track under its own power in less than five minutes.

# FABREEKA

## IS USED ON LOCOMOTIVES AND PASSENGER CARS TO ABSORB IMPACT SHOCK, VIBRATION, AND NOISE

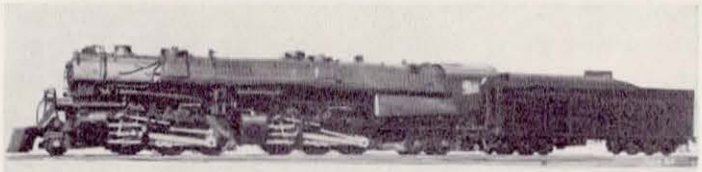
**Fabreeka is used on passenger cars to increase passenger comfort by absorbing noise and vibration and to reduce mechanical wear and maintenance. It is applied in trucks, platforms and draft gear.**

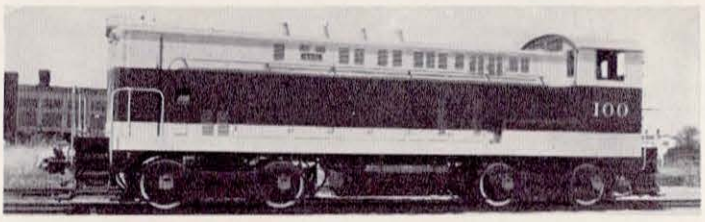
**Where abrasive wear is encountered Fabreeka is vulcanized to steel wear plates to insure adequate service life. It is used not only on new equipment but also when cars are modernized.**

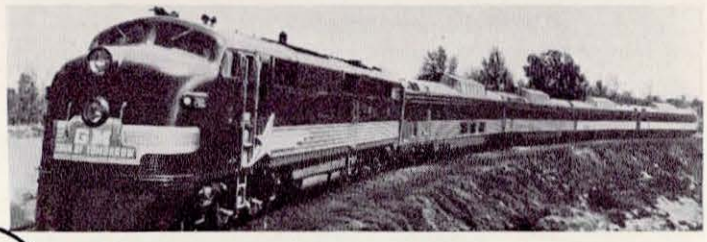
**The physical properties which make Fabreeka unique are: *great strength, use in "compression", minimum permanent set, controlled resiliency, stability, high damping value,* and *long life.***

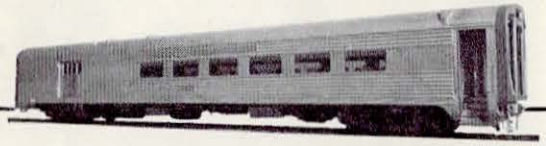
**Fabreeka On Locomotives**

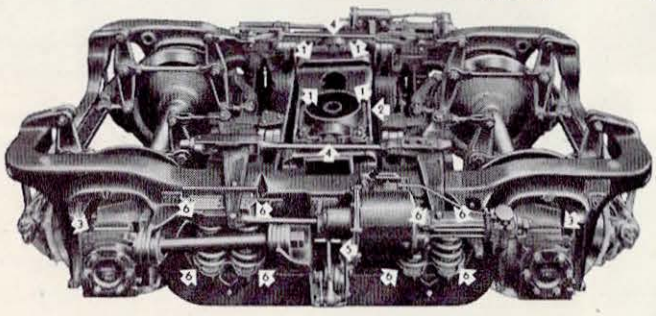
***On diesel-electric locomotives and switchers*** **Fabreeka is used at many points to reduce breakage and maintenance by cushioning impact blows and absorbing high frequency vibration . . . It is applied in main diesel engine mountings, air duct seal between bolster and transom, axle and stop pads, buffer stem sleeves and journal boxes.**
***On steam locomotives and tenders,*** **Fabreeka is used at the spring end clips of semi-elliptic springs, at coil springs, for pull rod wear blocks, journal boxes and at waist bearer on articulated locomotives.**











***Six Principal Fabreeka Applications For Passenger Car Trucks***

(1) Pad for bolster springs, top and bottom. (2) Pad under center plate. (3) Pad on top of journal box. (4) Pad under truck side bearing. (5) Pad under spring plank. (6) Pad for equalizing coil spring, top and bottom.

**(Fabreeka Applications for Car Platform and Car Body)**

| | |
|---|---|
| Center Buffer Stem Sleeve | Side Stem Spring Pad |
| Side Buffer Stem Sleeve | Coupler Carrier Spring Pad |
| Side Buffer Stem Sleeve—Rear | Coupler Carrier Pad |
| Center Buffer Stem Bushing | Coupler Carrier Casting Pad |
| Side Buffer Stem Lining | Coupler Slide Pad |
| Side Stem Bushing | Draft Gear Pad |
| Side Buffer Stem Wear Plate | Pull Rod Unit |
| Side Buffer Pin Washer | Pull Rod Guide |
| Side Buffer Stem Pin Bushing | Cylinder Lever Support |
| Side Stem Bumper | Body Side Bearing Pad |

**FABREEKA PRODUCTS COMPANY, INC.**
**222 SUMMER STREET**
**BOSTON 10, MASSACHUSETTS**

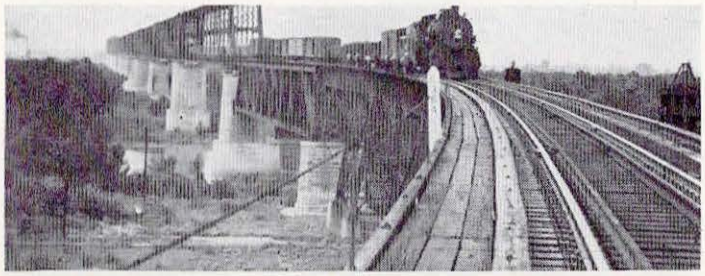
**SPECIFY FABREEKA**

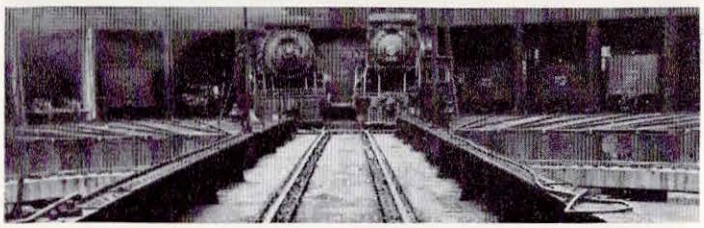
*It Pays*

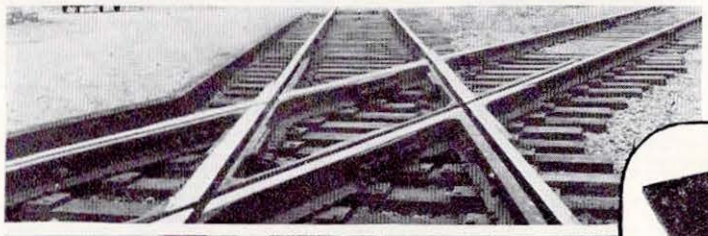
# FABREEKA

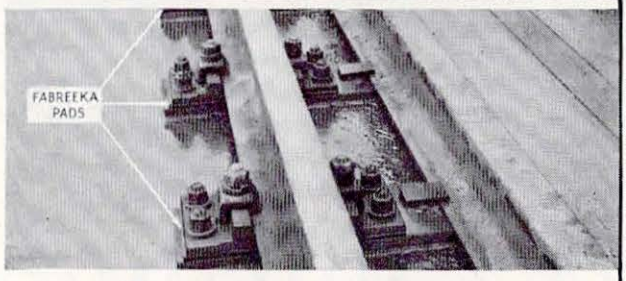
## ABSORBS IMPACT SHOCK AND VIBRATION ON BRIDGES, CURVES, SWITCHES, AND TURNTABLES

**The physical properties of Fabreeka, — great strength; minimum permanent set; controlled resiliency; high damping value and long life make Fabreeka the ideal material for use beneath crossings, cross-overs, and switches; on curves; in turntables; and on steel and concrete deck bridges.**










**At *crossings, cross-overs,* and *switches* Fabreeka pads between ties and tie plates increase the life of manganese points by cushioning impact blows from the wheels. Fabreeka's slow recoil from "compression" insures cushioning without bounce. Mechanical wear of ties is also reduced.**

**On *curves,* the mechanical wear on ties from plate cutting is eliminated. The frequency and expense of regauging track is greatly reduced. Fabreeka pads keep spikes from lifting.**

**In *turntables,* Fabreeka reduces impacts through application under end tie plates; under end tie plates of approach tracks; over bearings of turntable trucks; and under tie plates of circular rail.**

***Used between the rail and the steel or concrete deck of bridges,* Fabreeka eliminates the use of ties and ballast. This reduces the foundation depth required, yet leaves proper clearance for underpass, and yields sizeable savings in excavating and concrete work.**

**FABREEKA PRODUCTS COMPANY, INC.**
**222 SUMMER STREET**
**BOSTON 10, MASSACHUSETTS**

**IT PAYS**

*to Specify Fabreeka*

## FABCO TIE PADS

*For Open Track*

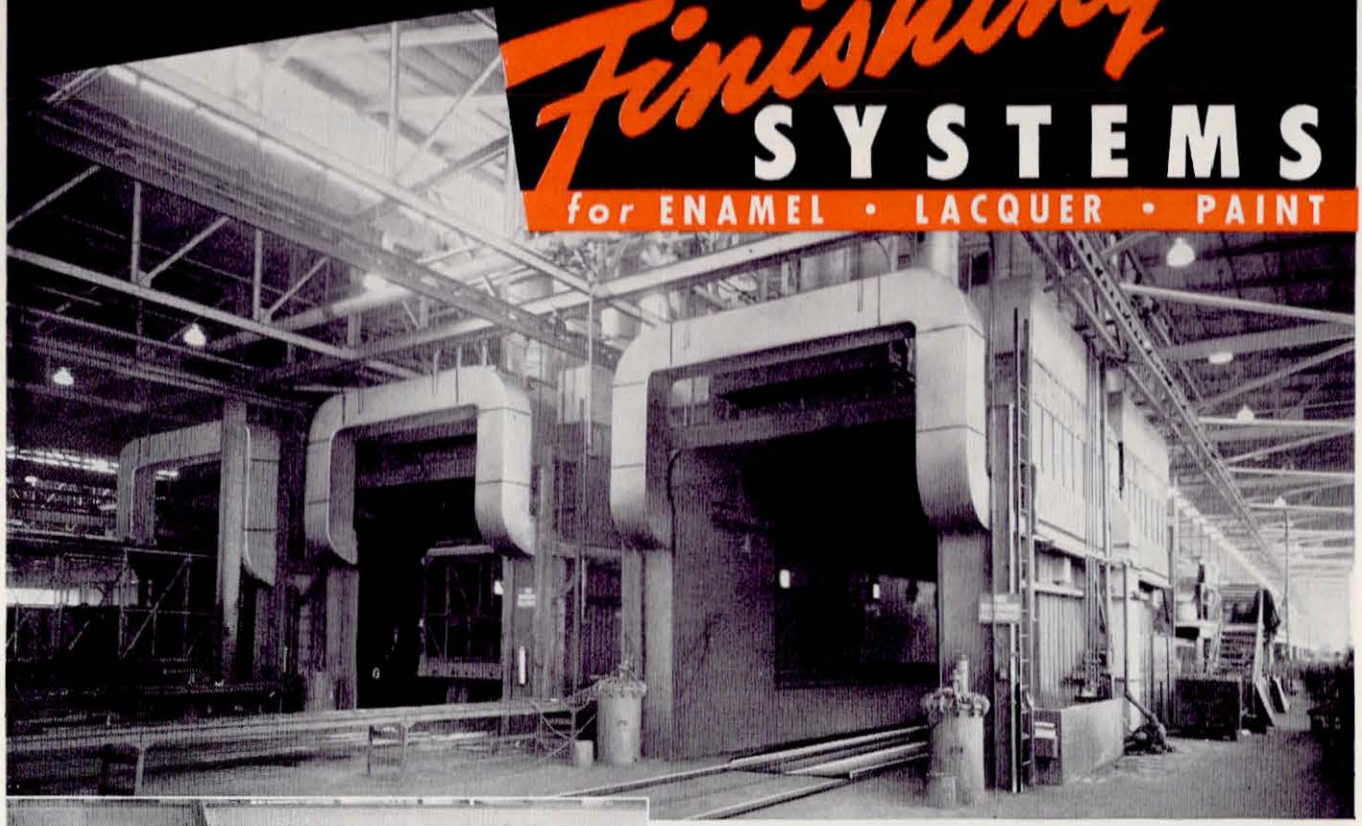
Fabco Tie Pads reduce the mechanical wear of ties, and are especially recommended for use on ties in curves, bridges, and switches where tie life is relatively short and the cost of renewal, high. Withstand extreme temperatures, moisture, mildew, sand. Spikes do not have to be driven down a second and third time.

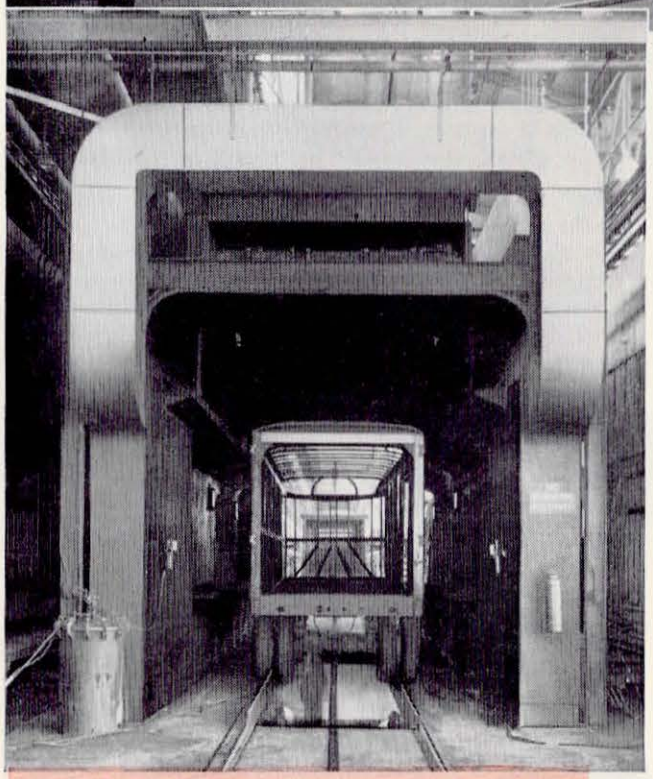
Longer Tie Life with Fabco Tie Pads
- resilient
- no set — no loose spikes
- no renewals required

*Made By The Makers of Fabreeka*

# COMPLETE *Finishing* SYSTEMS

for ENAMEL • LACQUER • PAINT





The Top Illustration Shows Mahon Hydro-Filter Spray Booths in Three Prime Coat Painting Production Lines in the Fruehauf Trailer Company's New Plant, Avon Lake, Ohio. Bottom Illustration Shows Completely Assembled Chassis and Body Skeleton Framework Receiving Prime Coat of Paint in one of the Spray Booths Illustrated Above.

## . . . Truck-Trailers Too, Receive Their Finish In MAHON Finishing Systems!

The Mahon Finishing System installed in the Fruehauf Trailer Company's new plant at Avon Lake, Ohio, is another excellent example of Mahon Finishing Equipment engineered into a straight line production system to handle completely assembled Truck-Trailers. This complete system in the plant of the world's largest producer of Truck-Trailers, is 1750 feet long and consists of thirteen Hydro-Filter Spray Booths, with Filtered Air Supply, and five Finish Baking Ovens. The prime coating is done on three production lines which converge into two production lines for the finish coat painting and baking operations. If you are contemplating new, modern finishing equipment, remember that Mahon has pioneered development in this highly specialized field for twenty-eight years . . . this broad experience in every industry, coupled with constant development research, has endowed Mahon engineers with a wealth of technical knowledge and practical know-how not available to you elsewhere. Better planning, better engineering, and a better and more economical job of finishing is the result. See Sweet's Mech. Ind. File for complete information.

**THE R. C. MAHON COMPANY**

**Home Office and Plant, Detroit 11, Mich. • Western Sales Div., Chicago 4, Ill.**

Engineers and Manufacturers of Complete Finishing Systems—including Metal Cleaning Machines, Rust Proofing Machines, Dry-off Ovens, Hydro-Filter Spray Booths, Filtered Air Supply Units, Drying and Baking Ovens, and Paint Reclamation Units. Also Core Ovens, Hydro-Foam Dust Collectors, and many other Units of Special Production Equipment.

# MAHON

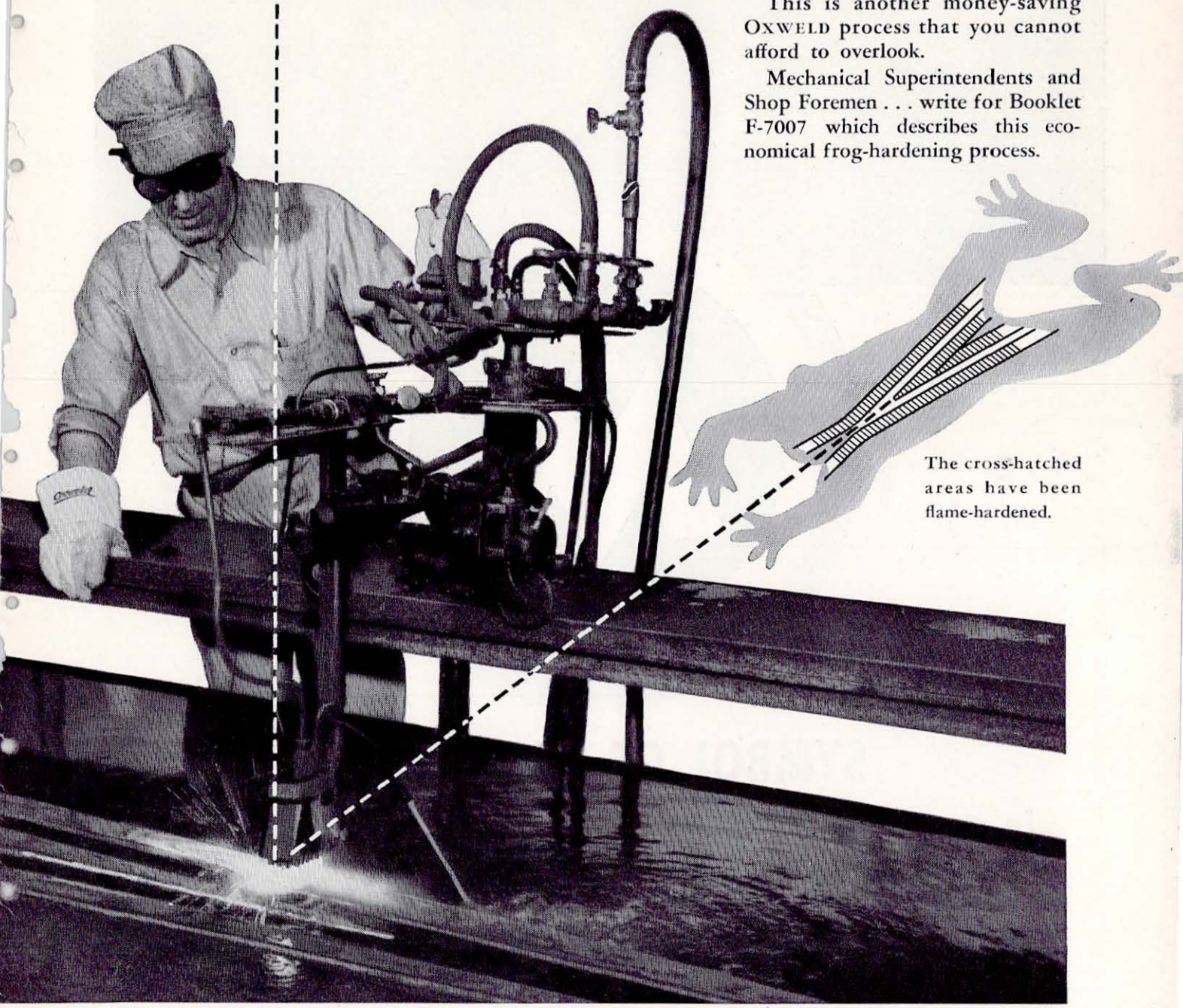
# FROGS can have 9 lives too

When carbon steel frogs are oxy-acetylene flame-hardened, their running surfaces will last up to nine times as long as untreated frogs.

This recently developed OXWELD method is simple and economical. A single multiflame heating head is used—no extra heating is required to draw or temper the hardened areas, and no special coolants are needed. Treated surfaces have uniform hardness values, correct hardness depth.

This is another money-saving OXWELD process that you cannot afford to overlook.

Mechanical Superintendents and Shop Foremen . . . write for Booklet F-7007 which describes this economical frog-hardening process.



The cross-hatched areas have been flame-hardened.

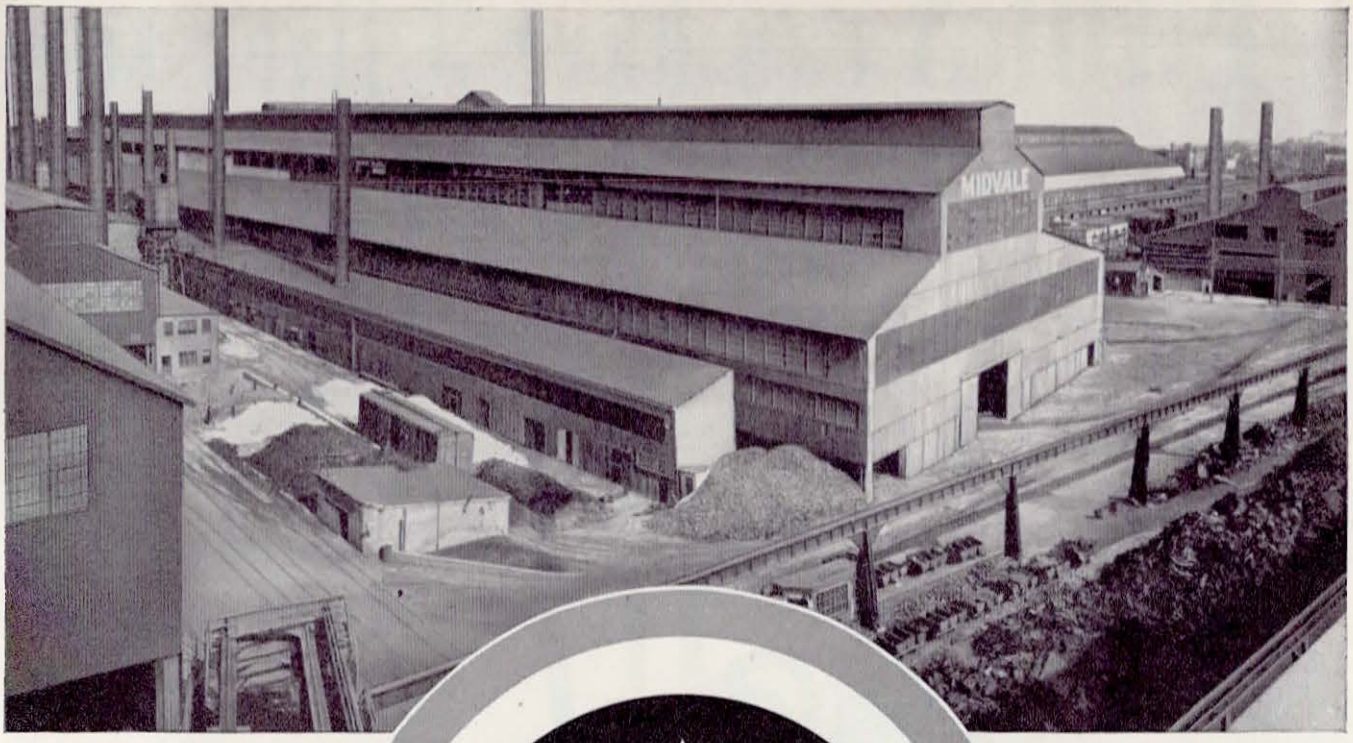
This flame-hardening blowpipe is mounted on a standard OXWELD CM-16 cutting machine.

**THE OXWELD RAILROAD SERVICE COMPANY**
*Unit of Union Carbide and Carbon Corporation*
UCC
Carbide and Carbon Building Chicago and New York
In Canada:
Canadian Railroad Service Company, Limited, Toronto
The word "Oxweld" is a registered trade-mark.

OXWELD RAILROAD SERVICE

P-21650

**SINCE 1912—THE COMPLETE OXY-ACETYLENE SERVICE FOR AMERICAN RAILROADS**




# SYMBOL OF THE FINEST

## *in quality steel making — the Midvale M-Star*

For 81 years Midvale has been manufacturing many steel products for a wide range of use. The outstanding performance of these products has earned us an enviable reputation. We look forward to continuing improvement in the manufacture of high quality forgings and high alloy castings to maintain this reputation.

FORGINGS—FORGED, HARDENED AND GROUND ROLLS
WELDLESS RINGS—CORROSION AND HEAT RESISTING CASTINGS

## THE MIDVALE COMPANY

NICETOWN • PHILADELPHIA

*OFFICES: NEW YORK • CHICAGO • PITTSBURGH • WASHINGTON • CLEVELAND • SAN FRANCISCO*

# MAXIMUM PROTECTION

## FOR CARS and LADING

Cardwell and Westinghouse shock-absorbing devices protect rolling stock against excessive horizontal, vertical, lateral and angular forces. They are designed with a high factor of safety, resulting in capacities well above the requirements.

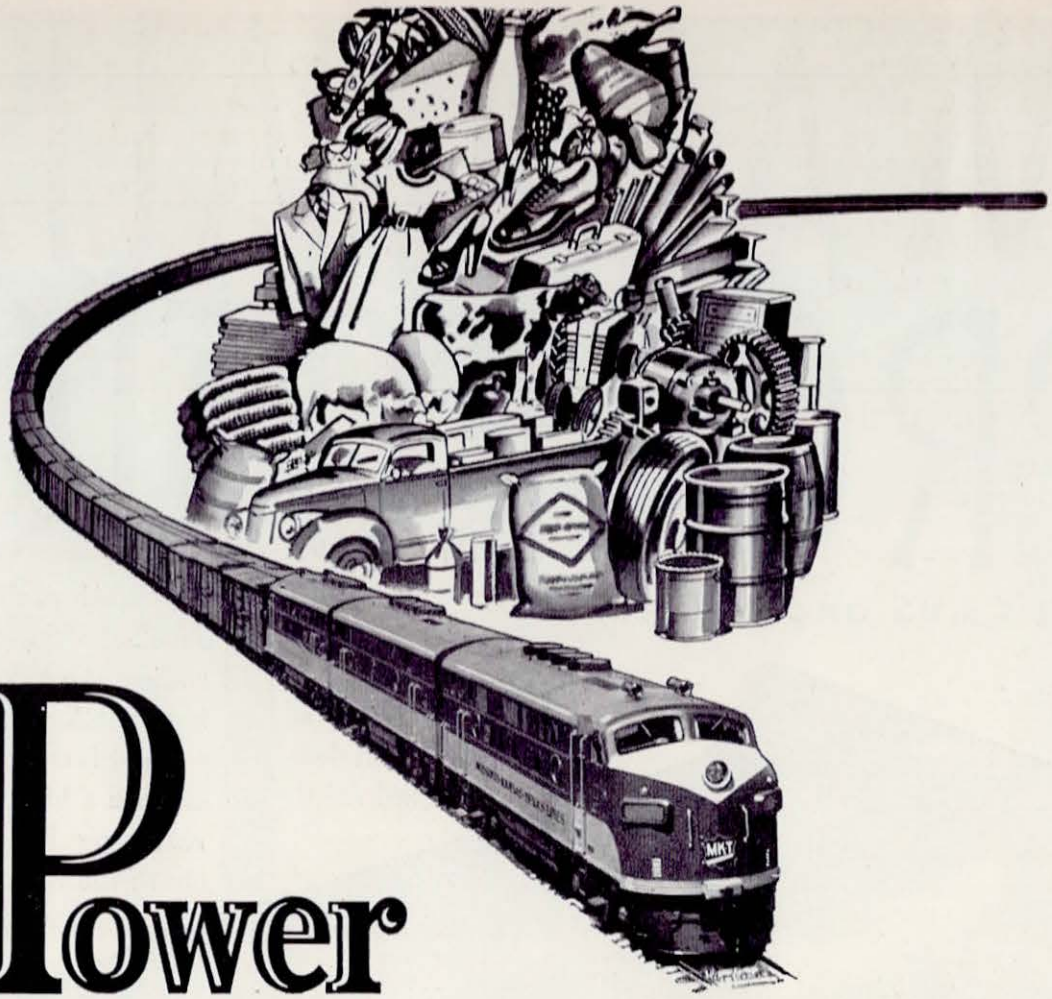
**WESTINGHOUSE**
Friction Draft Gear
Certified A.A.R.

**CARDWELL**
Friction Bolster Springs
. . . for A. A. R. and
Long-Travel Springs.

*Over 98% of the cars in freight carrying service are A. A. R. construction and over 96% have Friction Draft Gears.*

**Cardwell Westinghouse Co., Chicago**
**Canadian Cardwell Co., Ltd., Montreal**

2764

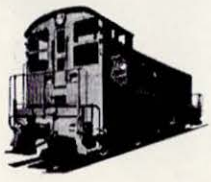


# the Power

## to move Mountains of Freight

**NEW MERCHANDISE CARS**
... hundreds of them, augment Katy's fleet of heavy cargo transportation.

**NEW HOPPER CARS**
... available for quick, efficient, versatile service to shippers.



**NEW DIESEL POWER**
... to expedite transfer of your freight at major terminals — and road haul it with speed and economy.

## YOURS ON THE *Katy*

**SMOOTH DIESEL POWER** ... to deliver your goods in perfect condition. High-speed power that permits scheduling to suit your every shipping need.

**DIESEL POWERED SWITCHERS** ... at important terminals to expedite the transfer of your carloads to markets and factories.

**RADIO POWER** ... a magic service PLUS to speed handling of your freight.

Katy's equipped for even heavier, longer hauls, smoother handling of your shipments—dependable, on-time service between Texas and Oklahoma and the North. For careful, precision shipping to and from the Southwest... ship KATY!

**MISSOURI-KANSAS-TEXAS LINES**

### *Ship Via The Southwest's Main Supply Line*

**KATY BULLET**
Daily from Kansas City and St. Louis to all main Southwestern points.

**KATY KOMET**
Katy's fastest—Southbound daily from St. Louis to all main-line points.

**KATY KLIPPER**
Daily, St. Louis and Kansas City to Oklahoma and Texas.

**KATY PACKER**
Northbound daily, Fort Worth to Kansas City and St. Louis.

**"72" FAST FREIGHT**
Daily from Texas and Oklahoma to Kansas City and St. Louis.

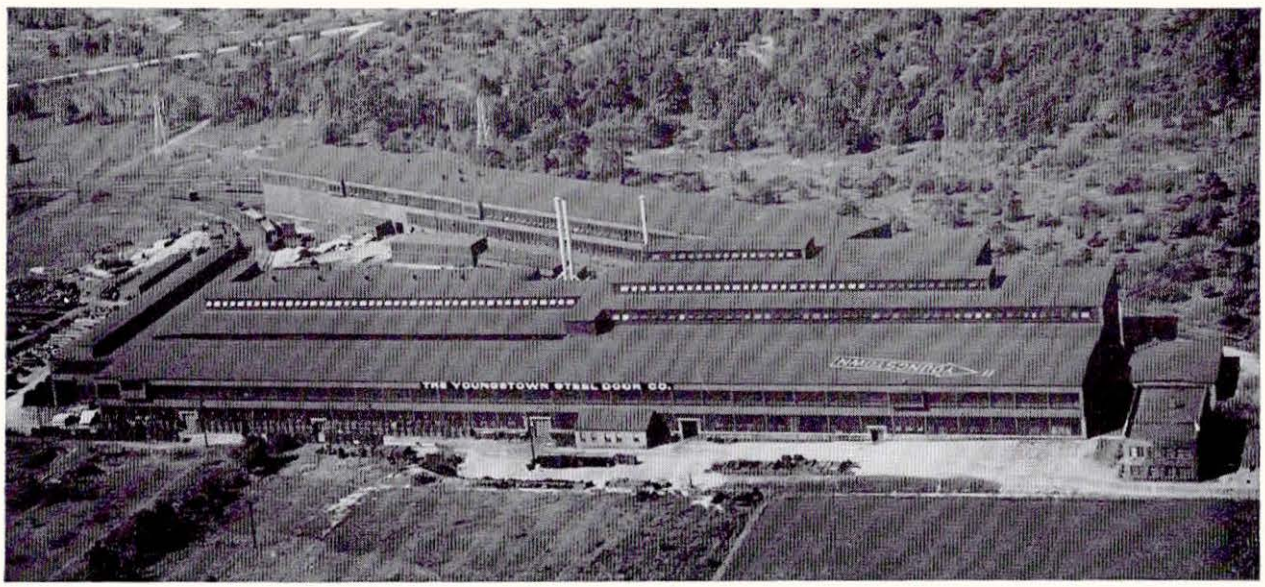
***Also... Convenient Double Daily Service between St. Louis and Kansas City.***

M·K·T
KATY RAILROAD
MISSOURI-KANSAS-TEXAS

174

# YOUNGSTOWN

## STEEL DOORS • STEEL SIDES • CAMEL FIXTURES




Plant of Youngstown Steel Door Company, Youngstown, Ohio

## Devoted to the Efficient Production of Vital Equipment for the Railroads

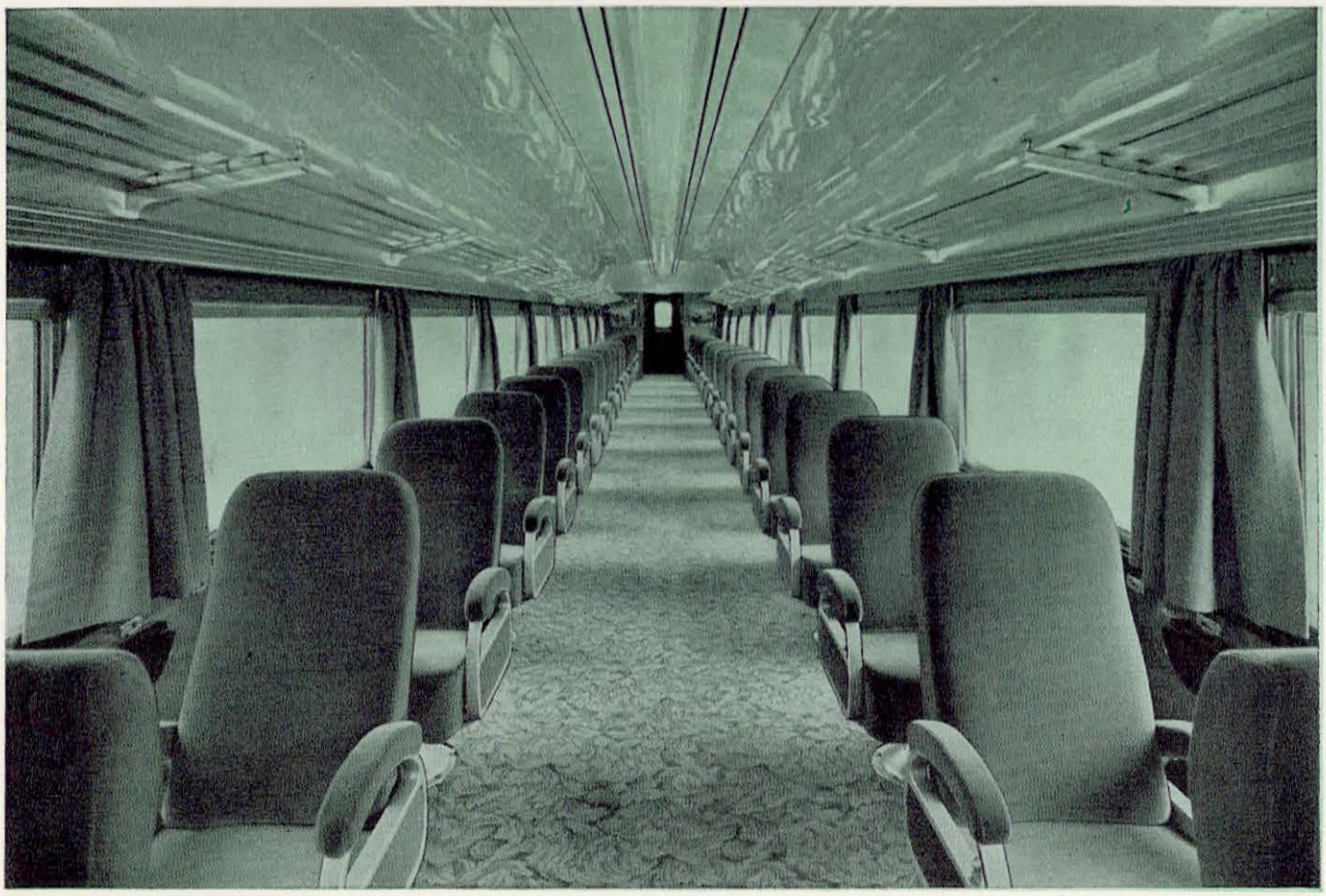
## YOUNGSTOWN STEEL DOOR COMPANY

Camel Sales Company
Cleveland Chicago

Camel Company Limited
New York Youngstown

# SOMETHING SPECIAL

## in New Haven Parlor Cars

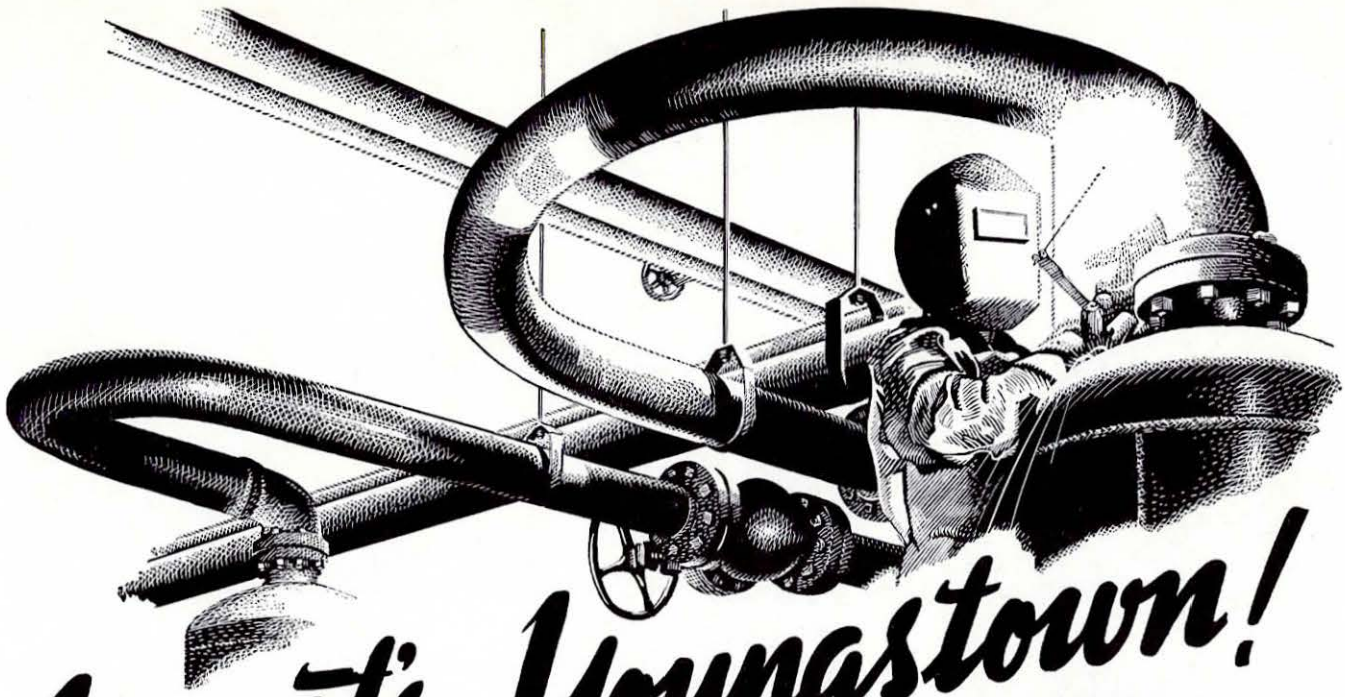


HEYWOOD-WAKEFIELD
EST. 1826

*Transportation Seating Division*
*Gardner, Mass.*

The New Haven Railroad's recently completed group of parlor and parlor-lounge cars offers passengers something really special in both appearance and *comfort*. The seats, for instance, are a new type, developed by Heywood-Wakefield for this installation in close cooperation with the New Haven engineers and the Pullman Standard Car Manufacturing Company.

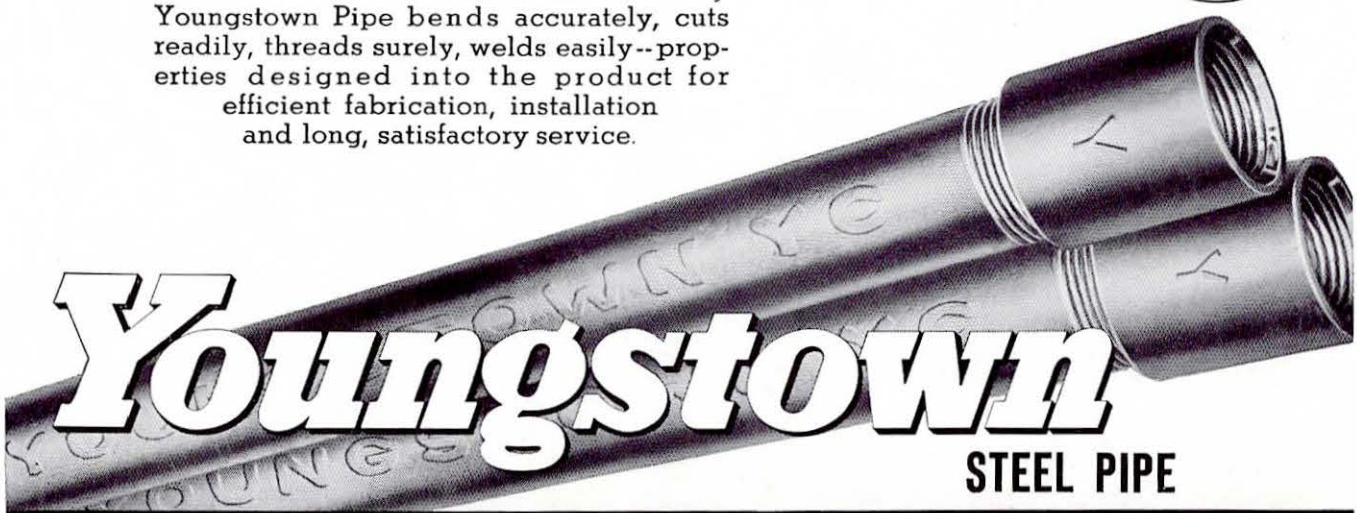
We would be glad to cooperate in the same efficient way in carrying out ideas which can make travel more attractive and more comfortable for *your* passengers.



# Yes, it's Youngstown!

## Dependable Steel Pipe ...Easy to Install

THROUGH the years, the guiding principle at Youngstown has been to make quality steel pipe which is well suited to serve the needs of plumbing and heating contractors and their customers. That's why Youngstown Pipe bends accurately, cuts readily, threads surely, welds easily--properties designed into the product for efficient fabrication, installation and long, satisfactory service.



# Youngstown STEEL PIPE

**THE YOUNGSTOWN SHEET AND TUBE COMPANY**

*Manufacturers of Carbon, Alloy and Yoloy Steel*

General Offices Youngstown 1, Ohio

Export Office - 500 Fifth Avenue, New York

PIPE AND TUBULAR PRODUCTS - CONDUIT - BARS - RODS - COLD FINISHED CARBON AND ALLOY BARS - SHEETS - PLATES - WIRE - ELECTROLYTIC TIN PLATE - COKE TIN PLATE - RAILROAD TRACK SPIKES.

# Stop these

## $81,000,000 CAR-LOT LADING DAMAGE SHOWS NEED FOR IMPROVED CUSHIONING

TEST after test and a wealth of operating service experience demonstrate conclusively that lading damage costs can be cut by equipping cars with Waughmat Twin Cushions. The more completely trains are Twin Cushion equipped, the more pronounced is the reduction of damage in transit.

Not only do Twin Cushions safeguard lading, but, because they cushion car structures as well as lading, they are a vital protection for rolling stock.

You'll be repair-money and lading-damage-money ahead by specifying Twin Cushions on your next cars.

*$399,239,520 FREIGHT CAR REPAIR BILL ALSO POINTS THE NEED*

*No less important than lading protection are the possible savings on the present exorbitant freight car repair bill. It is a well authenticated fact that Waughmat Twin Cushions protect both lading and equipment more fully than any other cushioning device.*

DAMAGE

**$100,205,371**

**12 MONTHS ENDING MARCH 1, 1947**

*In the classification yard where equipment and lading are most apt to be subject to shock, Twin Cushions provide exceptional safeguards.*

# losses

## $129,317,162

**12 MONTHS ENDING MARCH 1, 1948**

AND LOSS

TABLE I—FREIGHT LOSS AND DAMAGE UP 26.3 PER CENT

Freight loss and damage for the first three months of 1948 totaled $34,100,969, compared with $26,999,758 in like period of 1947.

Claim payments on individual commodities which increased more than the average of 26.3 per cent follow:

| | 1948 | % Increase over 1947 |
|---|---|---|
| Plumbers' goods | $ 372,440 | 119.1 |
| Refrigerators | 343,688 | 104.6 |
| Sugar | 457,413 | 104.3 |
| Furnaces, radiators, etc. | 341,615 | 92.8 |
| Sewer pipe & drain tile | 371,598 | 90.0 |
| Flour & other mill products | 994,456 | 88.9 |
| Fresh meats, P.H. products, dressed poultry | 540,385 | 85.3 |
| Stoves, ranges & parts | 675,253 | 79.2 |
| Agricultural implements & parts | 82,284 | 63.7 |
| Iron, steel, inc. wire | 667,687 | 57.5 |
| Coal and coke | 626,049 | 55.8 |
| Grain | 1,882,512 | 52.8 |
| Machinery (other than agricultural) | 694,644 | 50.1 |
| Brick, art, stone & building tile | 288,844 | 49.8 |
| Enamelware; washing machines, etc. enameled | 199,602 | 47.8 |
| Dry goods, clothing, in cans and packages | 1,081,214 | 39.5 |
| Food products (new) | 2,051,960 | 33.0 |
| Other manufacturers & misel. | 6,449,399 | 28.1 |
| Furniture | 2,732,941 | 26.4 |

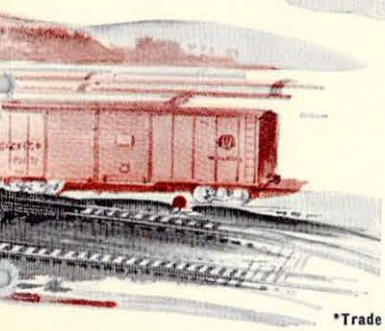
For the 12 months ended March, 1948, the loss and damage account totaled $129,317,162, compared with $100,205,371 a year previously, an increase of 29.1 per cent. In the same 12 months' period, increases as follow were reported for the causes stated:

| | |
|---|---|
| Unlocated | 25.7 Per Cent Inc. |
| Damage and improper handling | 55.3 " " " |
| Delay | 40.8 " " " |
| Defective equipment | 33.3 " " " |
| Concealed damage | |

lading damage claims up 26%

**to protect lading & equipment specify . . .**

# WAUGHMAT *Twin Cushions*



**WAUGH EQUIPMENT COMPANY**

New York • Chicago • St. Louis • San Francisco

*Trade Mark

# SAFETY GENEMOTORS

## *ALL HAVE AS PART OF THE COMPLETE EQUIPMENT*

***(a) Precision Voltage Regulation*** ***(b) Maximum Current Control***

GUARANTEED PERFORMANCE
LIBERALLY DESIGNED
RUGGED CONSTRUCTION
RIGIDLY INSPECTED
TIME-TESTED IN SERVICE
EASY TO MAINTAIN

10 KW 15 KW 20 KW 25 KW 30 KW

**SAFETY GENEMOTORS...** Eliminate all guesswork and confusing calculations on "what power is available".

**SAFETY GENEMOTORS...** Provide unequalled voltage regulation and offer maximum protection for your batteries.

**SAFETY GENEMOTORS...** "Grab the load" at low speeds, hence save in cycling of batteries.

**SAFETY GENEMOTORS...** Do not "run out of regulation" and "droop" at upper speed values.

THE SAFETY CAR HEATING AND LIGHTING COMPANY INC.

NEW YORK · CHICAGO · PHILADELPHIA · ST. LOUIS · SAN FRANCISCO · NEW HAVEN · MONTREAL

SAFETY COMPANY PRODUCTS INCLUDE: Complete Air-Conditioning Equipment • Genemotors • Generators • Fans Regulators • Lighting Fixtures • Switchboards • Parcel Racks • Generator Drives • Motor Alternators

# OBEDIENT to the LIGHTEST TOUCH!

Photo courtesy of Pennsylvania R. R.

. . . THE NP

# Automatic End Door Operator

• So sensitive that it responds safely and surely even to the command of a four year old, the NP Automatic End Door Operator fascinates passengers of all ages with its magical convenience.

A touch of the latch bar from outside — or a slight pull of the handle from inside — and the end door swings open, then closes gently after the passenger has gone by. Completely safe and reliable, the door can be controlled by the passenger during all phases of its operating cycle; when not in operation, it is held firmly closed.

The NP Automatic End Door Operator travels in the best of company, for you'll find it on leading trains of over twenty of the nation's foremost railroads — on new or remodeled coaches, with swinging or sliding doors. Of simple design and rugged construction, the Automatic End Door Operator reflects all the engineering experience gained by National Pneumatic in nearly fifty years of leadership in the manufacture of Door Control and Safety Equipment.

*Write today for Publication No. 1063 — it tells the complete story.*

## NATIONAL PNEUMATIC COMPANY

**Graybar Bldg., New York** **McCormick Bldg., Chicago** **Rahway, New Jersey**

**Represented in Canada by Railway & Power Engineering Corp., Ltd., Toronto**

7169

WORLD'S LARGEST MANUFACTURER OF DOOR CONTROL EQUIPMENT

UNION PACIFIC

# Your choice of *Streamliner* service between Chicago and the PACIFIC COAST

Union Pacific's daily Streamliners provide splendid accommodations for both Pullman and Coach passengers. Superb Dining-car meals . . . restful Club and Lounge cars . . . and a smooth roadbed add to the pleasure of your journey—from beginning to end.

*Streamliner* **"CITY OF LOS ANGELES"**
Between Chicago-Los Angeles

*Streamliner* **"CITY OF SAN FRANCISCO"**
Between Chicago-San Francisco

*Streamliner* **"CITY OF PORTLAND"**
Between Chicago-Portland

**ALL STREAMLINER COACH SEATS ARE RESERVED**

* * *

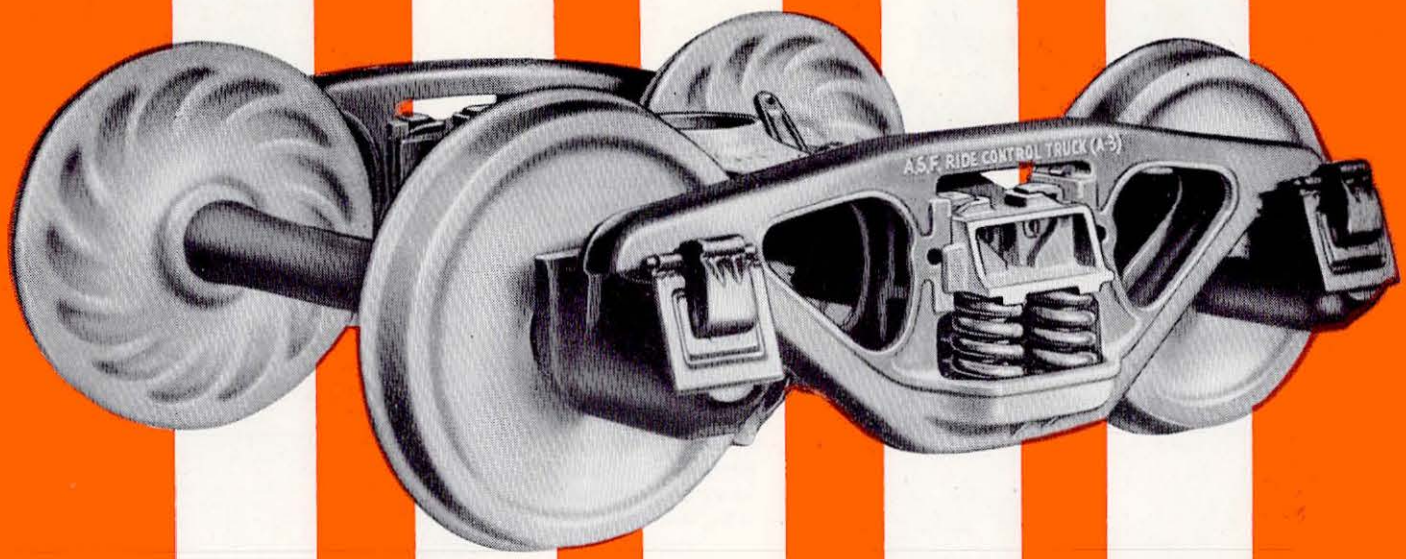
Also overnight service every night between Chicago and Denver on the Streamliner "CITY OF DENVER."

Daily service on the Streamliner "CITY OF ST. LOUIS" between St. Louis and Denver . . . with through cars to the West Coast.

## UNION PACIFIC RAILROAD

*Road of the Streamliners*

# 100



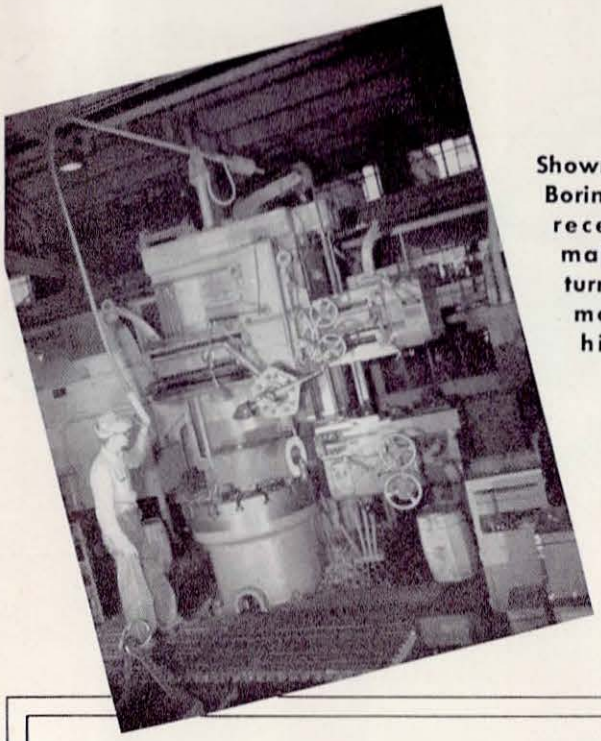

**More than 136,000 Car Sets of Smooth-Riding A. S. F. Ride-Control Trucks have now been ordered by *Over a Hundred* different users.**

## A-S-F *Ride-Control* TRUCK

# AMERICAN STEEL FOUNDRIES

MINT-MARK OF ⬡ FINE CAST STEEL

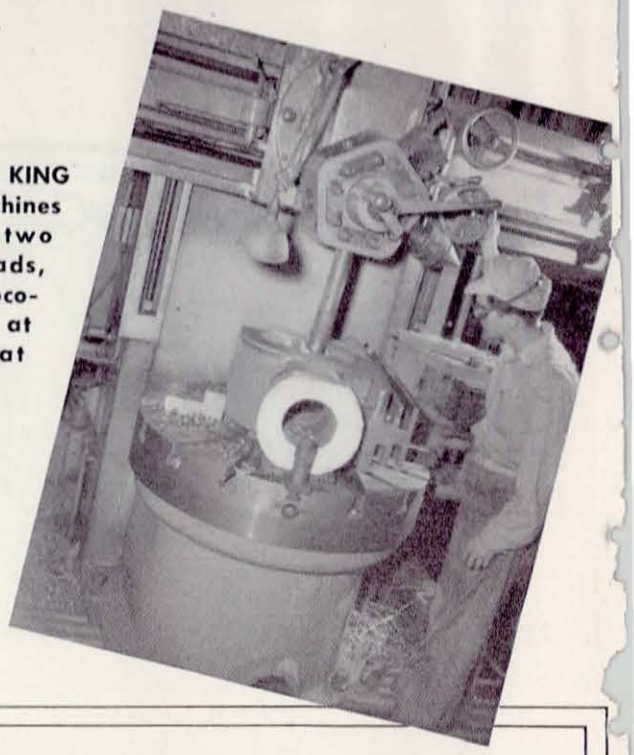
# Modern Railroad Management



Shown here are several KING Boring & Turning Machines recently installed by two major Eastern railroads, turning out important locomotive repair parts at high speeds and at minimum cost.

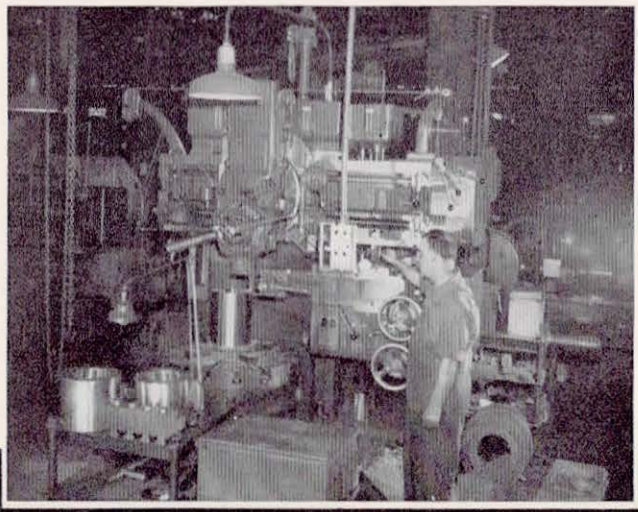
●

Two views showing a new 42" KING Boring & Turning Machine facing off a multiple bearing crosshead for locomotive engine.



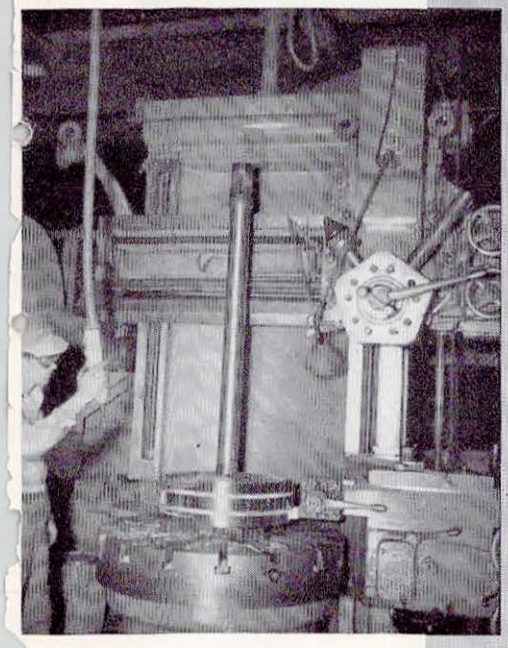
## KING VERTICAL BORING & TURNING MACHINES

are made in ten sizes: Single Column Machines, one head on rail—30", 36", and 42" swing; Double Column Machines, one or two heads on rail—52", 62", 72", 84", 100", 120", and 144" swing. All sizes available with or without side head.



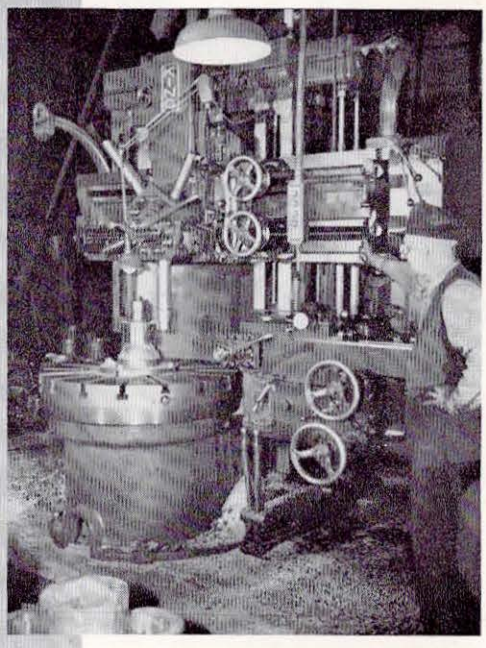
Two views of a new 36" KING machining a brass crank arm lateral washer for a steam locomotive. These washers are in two sizes: 10-1/2" x 7/16" or 3/8" thick. 22 washers are produced from each stock casting.

# SPEEDS SHOP SCHEDULES, INCREASES LOCOMOTIVE AVAILABILITY



Finishing bronze surface of a locomotive piston rod on a new 42" KING.

## The King Way



Another new 42" KING machining side rod brass with a carbide tool.

Executives of leading railroads today are giving top priority to getting the greatest possible utilization of locomotives through more efficient, more economical maintenance.

KING is playing an important part in this progressive program. More and more, railroads are replacing old, inadequate equipment with new-series KING Boring & Turning Machines. As a result, they get increased maintenance efficiency—a definite speeding up of locomotive repairs through the turning out of dependable parts in less time, at less cost.

Extra heavy construction gives new-series KING Machines the *increased rigidity* essential for successful use of carbide tools. There's more power, more versatility, a wider range of feeds and speeds. All controls are conveniently located at front of the machine.

KING Engineers are thoroughly acquainted with railroad shop problems. Call on us any time for help in speeding production and reducing cost of your boring and turning work.

***Specifications and detailed description of construction and operating features sent promptly on request***

American Steel Foundries

**KING MACHINE TOOL DIVISION**

**CINCINNATI 29, OHIO**

*Builders of King Vertical Boring & Turning Machines and Sebastian Lathes*

# *How Much*

# CAN PRE-FRAMED CREO-PINE

## BRIDGE TIMBERS *SAVE YOU?*

ON busy tracks, replacing bridge timbers can be expensive. By hand-framing in the field, only one timber can be drawn, a new one inserted, adzed to fit, holes bored, etc. Alert railroad men save up to 50 per cent on installation costs by using pre-framed Creo-pine timbers. Mill framed, timbers are dapped, bored and sized *before* treatment with accuracy not possible in hand framing. Shipped ready for use, several timbers can be replaced at once even where trains pass every 15 or 20 minutes. Creo-pine products are pressure creosoted to insure long life. Write for information on pre-framed Creo-pine timbers and other bridge members —and see how they can save money for you.

Creo-pine
TRADE MARK REG. U. S. PAT. OFF.

**CREO-PINE PRODUCTS:**

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|---|---|
| Poles | Floor Blocks |
| Piling | Subflooring |
| Cross ties | Bridge Timbers |
| Cribbing | Guard Rail |

Structural Timbers, etc.

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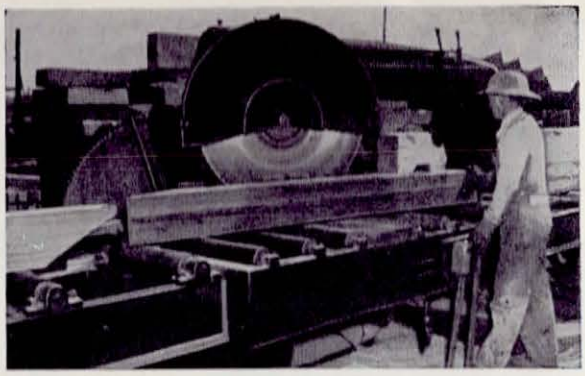
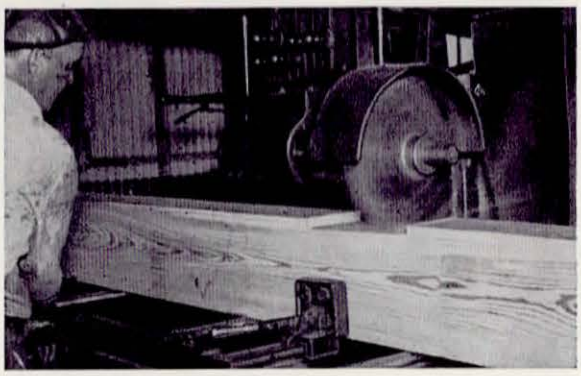
**ATLANTA, GEORGIA**

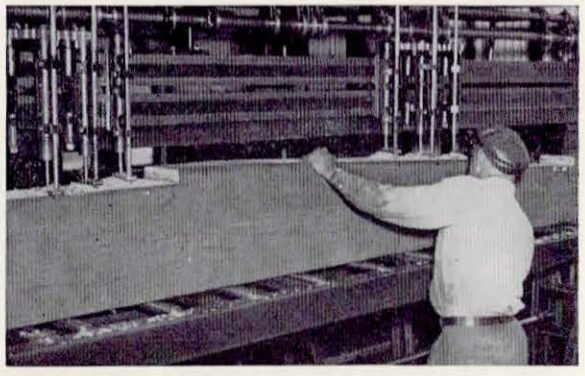
Representatives in New York, Philadelphia, Toledo, Pittsburgh, Detroit and Chattanooga



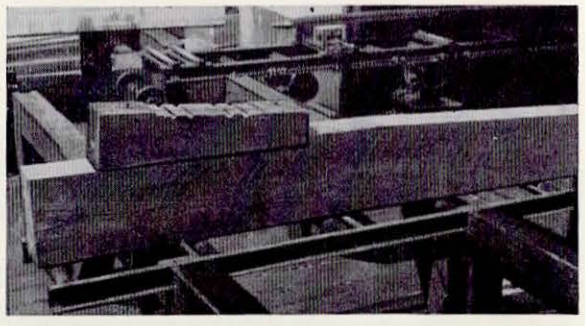
Timber saw set for angle cutting. Can be set for any angle, important in preframing batter posts accurately.



Pine timber being dapped. Accuracy of dimensions possible to a degree which cannot be obtained with hand tools.

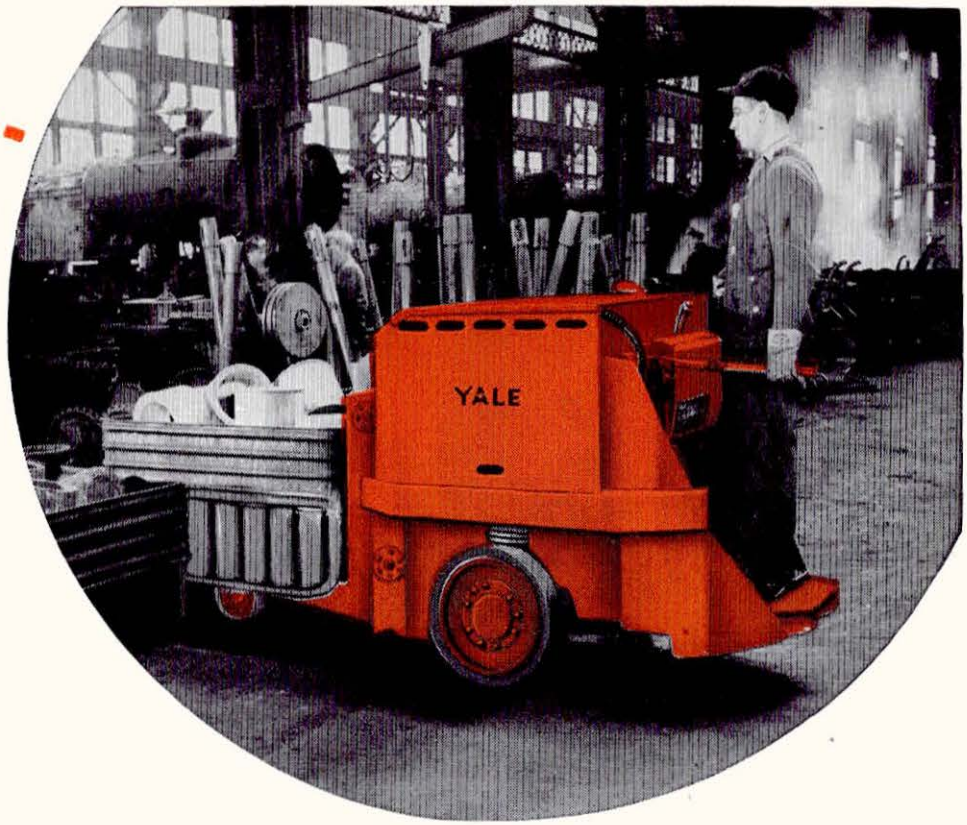


Timber boring machine with six holes made simultaneously. Designed to bore 20 holes, practically any pattern can be obtained with accuracy of spacing and truly perpendicular bore.



Finished bridge tie. This one built up so track will be banked properly. Note rivet notches and dapping for quick installation.

# MATERIAL MOVES FASTER FROM SPOT TO SPOT...




## WHEN YOUR SHOP IS YALE EQUIPPED

You not only get more output per manhour when you move by Yale power, but cost per ton of handling material is less when Yale Trucks replace muscle men.

For loading and unloading freight cars and transporting material around the yards, too, railroads have found Yale Trucks do more work, easier, faster, releasing valuable manpower for more important duties.

Find out today how Yale Trucks can cut your material handling costs. Write, phone or telegraph the nearest Yale representative, or get in touch with us direct. We'll be glad to study your handling problems and make recommendations without obligation. The Yale & Towne Mfg. Co., Philadelphia Division, Philadelphia 15, Pa.

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110 East 42nd St.

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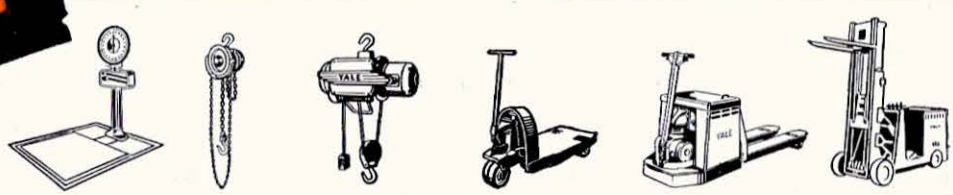
YALE

**MATERIAL HANDLING MACHINERY**

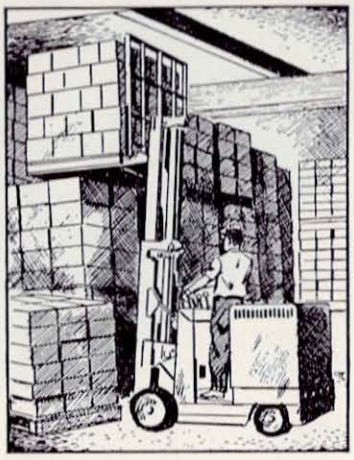
*CUTS HANDLING COSTS . . . SAVES TIME . . . SAVES EFFORT . . . PROMOTES SAFETY*



INDUSTRIAL SCALES • HOISTS—HAND AND ELECTRIC • TRUCKS—HAND LIFT AND ELECTRIC

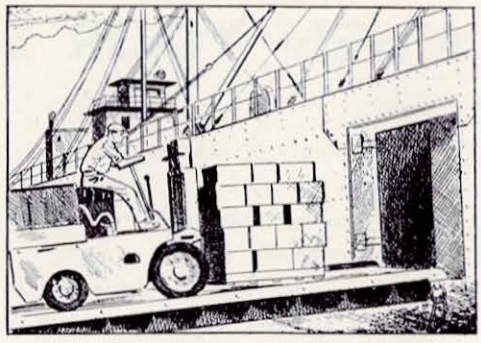
# Battery-Powered INDUSTRIAL TRUCKS where UNIT-LOAD SAVINGS are greatest

**95.6% SAVINGS IN MAN-HOURS** for a pharmaceutical manufacturer in unloading a highway-truck and placing bags in storage. This operation previously took three men 4½ hours. Supplier of bagged raw material was asked to ship in unit loads. Now one man and an *electric* industrial truck do the job in 12 minutes, safely and without risk of contamination.



**UNIT LOADS SAVE BUILDING NEW WAREHOUSE** for food distributor. High-lift electric trucks store a wide variety of palletized products *clear to ceiling.* Actually reduce, by two-thirds, the time formerly needed for stacking. *Battery-powered* trucks handle *more* material *faster*—assure clean, fume-free handling without fire hazard.

**210 MANUAL HANDLINGS BECOME 3 WITH UNIT LOADS.** A steamship line needed 210 handlings to load one cargo item. Now with *electric* industrial trucks and unit loads the same job takes 3 *handlings.* Battery-power dependability in tough stop-and-go service further reduces loading time, increases number of sailings —cuts costs to shipper and consignees.



*Unit-load handling* cuts your costs *before* materials and products reach you. Unit-load handling *in* your plant and *from* your plant reduces prices you and your consignees must charge.

Your suppliers can pack to your specification. It is to their advantage and to your advantage to pack in unit loads. Unit-load handling through your own operations and to your customers gives you important savings and competitive advantages.

*With battery-powered industrial trucks,* you get unit-load handling most dependably, most efficiently . . . *at lowest cost per ton handled.* That's why you'll find *many* more electric trucks than all other kinds in the service of America's cost-conscious industries.

**THE ELECTRIC INDUSTRIAL TRUCK ASSOCIATION**

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For information on unit-load handling with electric industrial trucks, taken from the actual experience of users, write today for your free copy of the MATERIAL-HANDLING HANDBOOK.

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The modern brake that helps speed freight movement and cuts the cost of train operation.

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The initials stand for "high speed control" and tell the whole story—a brake that meets the demand of today's faster passenger trains.

**. . . LOCOMOTIVE BRAKE EQUIPMENT**

The 24-RL equipment has been designed to safeguard both passenger and freight movement. It lends itself to a combination of electro-pneumatic application and release circuits, and electric governor and sand control are important improvements.

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Supplies high efficiency traction for both steam and diesel locomotives, both in deceleration and acceleration. Economical with air; saves sand too by placing it right at the point of greatest effectiveness instead of scattering it. Increases the life of rails, tires, wheels, and bearings.

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Minimizes delays at terminals while avoiding unnecessary loss of compressed air and the resultant need for replacment before trains can resume runs.

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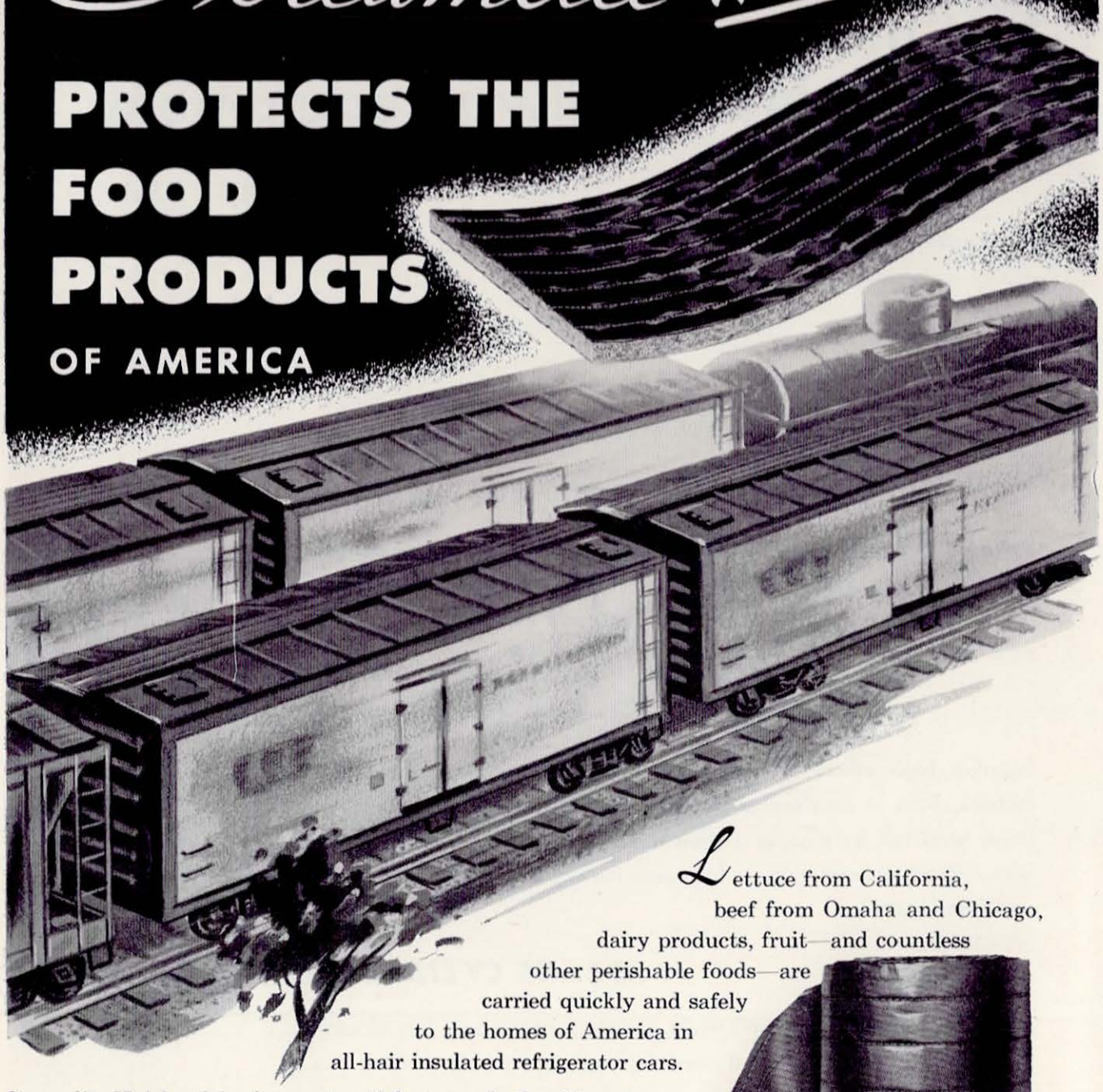
# *Streamlite* Hairinsul

## PROTECTS THE FOOD PRODUCTS OF AMERICA



Lettuce from California, beef from Omaha and Chicago, dairy products, fruit—and countless other perishable foods—are carried quickly and safely to the homes of America in all-hair insulated refrigerator cars.

*Streamlite* Hairinsul is the most satisfactory of all refrigerator car insulations. The choice of shippers year after year, retains its high insulation efficiency throughout the life of the car even when exposed to moisture and other insulation hazards.

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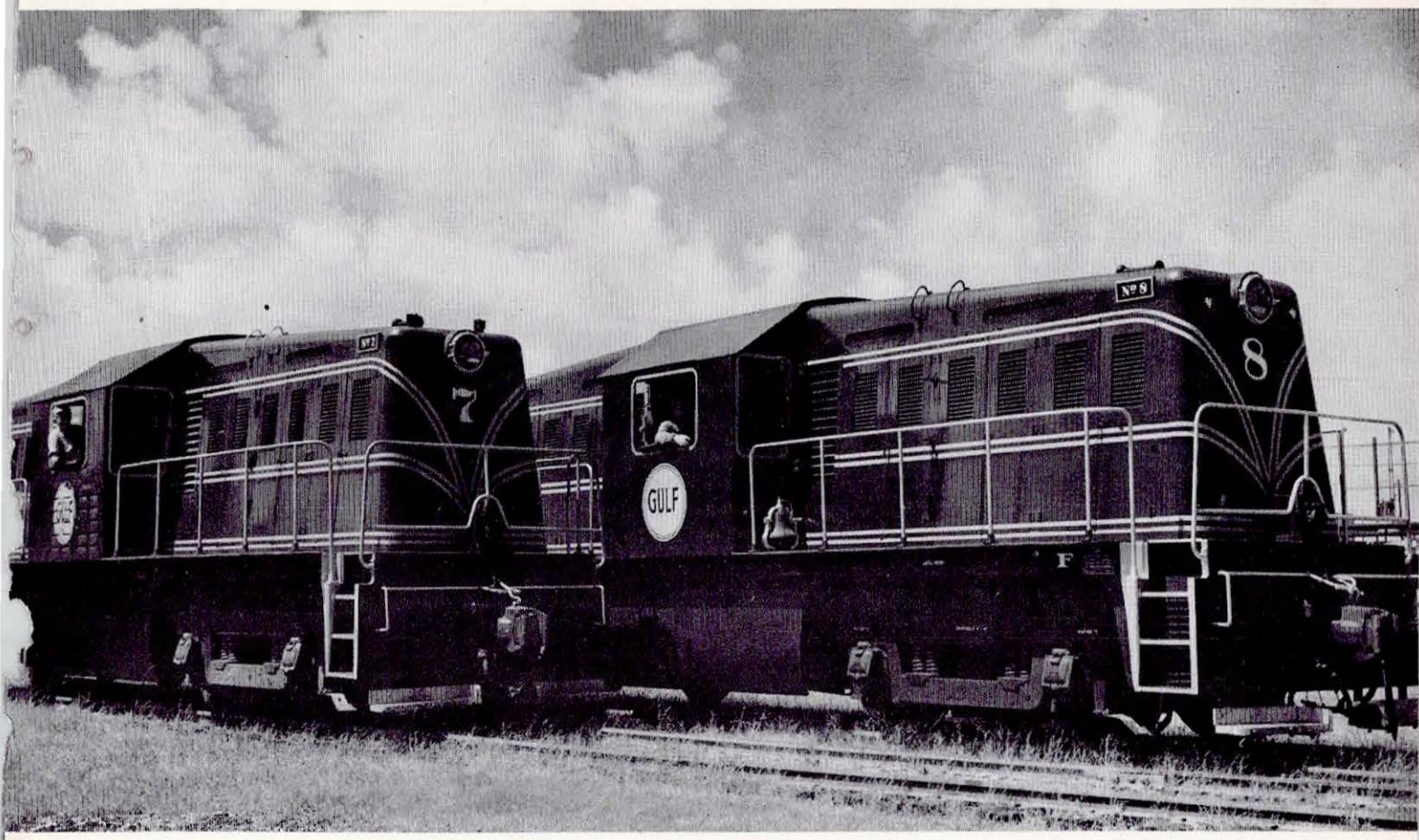
# At Gulf, WHITCOMB DIESELS help process 200,000 Barrels of oil Daily




**On a 'round-the-clock schedule, two 70-ton Whitcomb Diesel Electric Locomotives handle 4,500 cars per month at Gulf's 3500-acre Port Arthur, Texas, refinery.**

These recently delivered Whitcomb Diesel locomotives play a vital, profit-making role for Gulf, providing increased availability, greater economy, extra power needed to handle this refiner's greatly expanded operation. Replacing steam and gasoline power, these fast, trouble-free Whitcombs are at work on a 24-hour basis — classifying, switching, hauling, spotting — delivering throughout the plant the materials for processing and maintenance, delivering tank cars to and from public carriers on a 3500-acre network of tracks.

Throughout industry — from oil to metal working to lumber to mining — leading firms are cutting their transportation costs with Whitcomb locomotives. Our long experience building locomotives for industry qualifies us to solve your haulage problems — large or small, simple or complex.

Remember, no power is cheaper than diesel power, and no locomotive is finer than a Whitcomb locomotive.

**Whitcomb locomotives spot deliver refining supplies to plant points.**

**Whitcomb locomotives return "empties" from carrier tracks to refining plant.**

**Offering greater economy and availability, Whitcombs serve throughout industry.**

KINNEAR ROLLING DOORS

A SIGN OF MORE EFFICIENT BUILDINGS FOR EVERY RAILWAY NEED

# STEEL ROLLING DOORS

STEEL ROLLING DOORS bring highest efficiency to service openings of every type. With smooth, easy coiling upward action, they glide out of the way overhead, safe from damage. Doorways remain clear — from jamb to jamb *and* from floor to lintel — until the doors are closed again.

All wall and floor areas *surrounding* the openings are fully usable at all times. Materials or merchandise can be stored within an inch or two of the door curtain, on either *or both* sides, without impeding its action.

The tough, flexible, all-steel construction of Kinnear Rolling Doors gives them longer service life, cuts maintenance costs to rock-bottom, and assures extra resistance to weather, wear, fire and intrusion.

For added ease and speed of operation, Kinnear Steel Rolling Doors can be equipped with Kinnear Motor Operators. Pushbutton controls may be placed at the door jamb, as well as at one or more remote points. A single control panel may be used to operate several doors, when desired.

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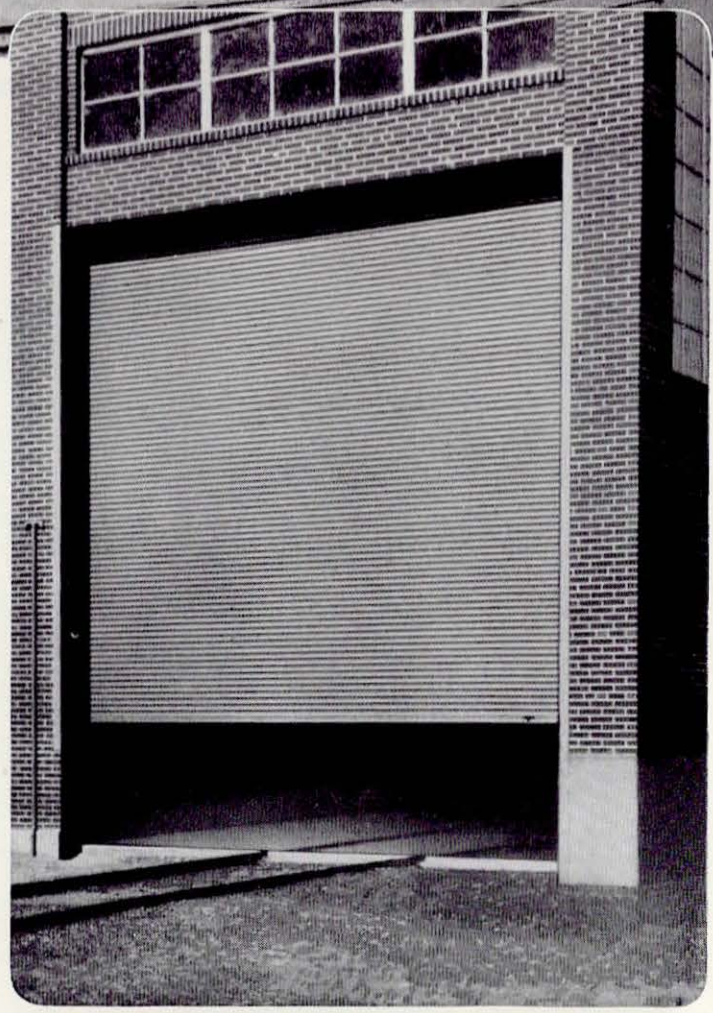

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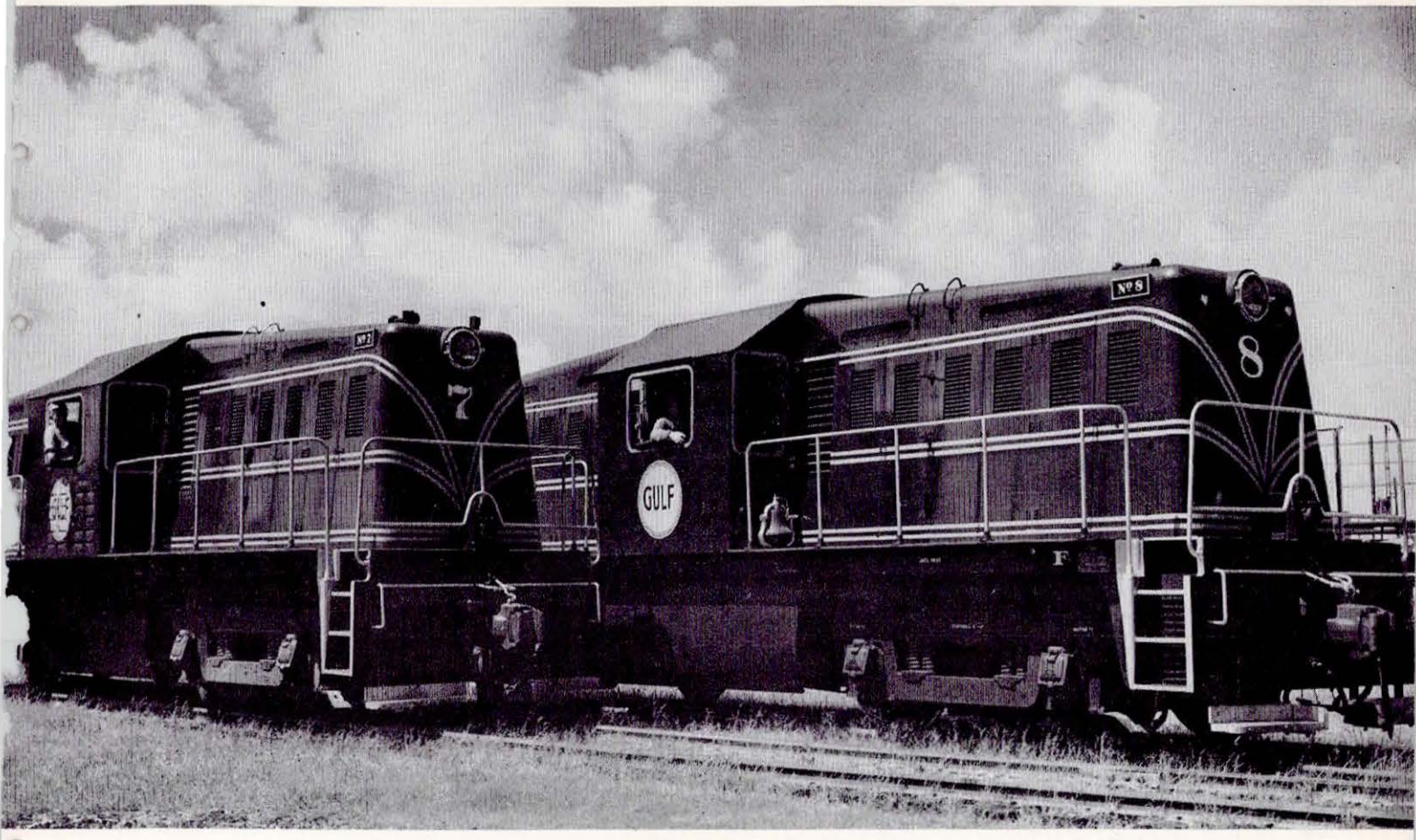


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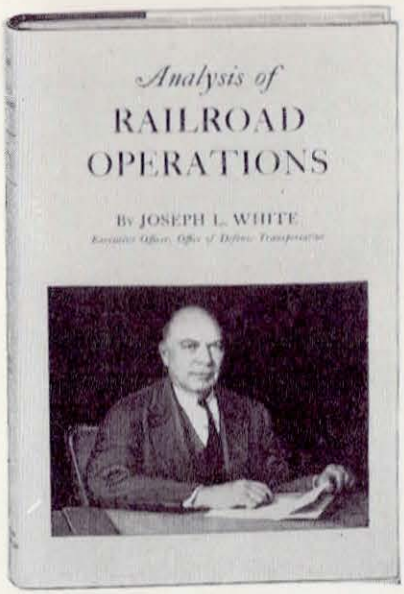
**To Interpret**
**Railroad Statistics**
**You Need a Copy of . . .**




2nd Ed. 324 pages, 5 charts, 87 illus., 29 tables, index, 6 x 9, cloth, $5.00

# *Analysis of* RAILROAD OPERATIONS

***By JOSEPH L. WHITE***

***Formerly Executive Officer, Office of Defense Transportation***

This new book is a guide through the intricacies of railroad accounts. It is the only authoritative work on the interpretation of operating statistics. It shows how to analyze the figures so as to determine whether a department is being operated efficiently and whether operations for the railroad as a whole are on a profitable basis.

Without going into the details of accounting procedure the accepted methods of interpreting statistical data are clearly set forth. Each chapter delves into an intricate phase of railroad accounts or statistics, analyzes its meaning and points out its significance in relation to net operating results. In the final Chapter a comparative analysis is made on the operating results of two large railroads based on their reports to the Interstate Commerce Commission which are available to the public. One is a steam railroad which derives most of its operating revenues from heavy freight traffic. The other is partly electrified and earns a large revenue from passenger traffic.

For the inexperienced this book tells where to begin, where to find the information wanted and how to compile it. The experienced analyst will find in it many helpful hints and short cuts. Railroad executives and operating officers as well as department heads who may be called on to explain accounting figures reflecting on departmental activities, will find in it information they need. Railroad economists and statisticians can make use of the methods outlined.

"This volume is a useful one for specialists in the field of railroad accounting, statistics, and operations. It is useful in explaining to investors some of the methods used by analysts who study the equities underlying railroad securities, and the regulating agencies charged with responsibilities for administering laws governing railroads and other transportation utilities.

"From these data the author suggests methods by which the analyst may compare one operation with another, or the operation of one period with operations in another period, or diagnose the symptoms of efficiency or inefficiency or of favorable or unfavorable characteristics which are revealed by these data. The method is useful for both quantitative and qualitative analysis, and for past, present, and future periods."—*The Annals of the American Academy.*

"The work should be interesting and useful to anyone who undertakes to study and interpret railroad reports and statistics—particularly railroad executives, investment analysts, and economists."—*The New York Certified Public Accountant.*

## Contents

Introduction—General Principles of Railroad Accounting—The Income Statement—Railway Operating Statistics—Railway Operating Revenues—Statistics of Freight and Passenger Service—Causes of Fluctuations in Operating Revenues—Railway Operating Expenses—Relation of Expenses to Revenues—Maintenance of Way and Structures—Unit Cost of Maintaining Road Property—Maintenance of Equipment—Account 314, Freight Train Cars Repairs—Unit Costs of Maintaining Equipment—Budgetary Control of Maintenance Expenses—Transportation and Miscellaneous Operations—Unit Costs of Operation—Statistics of Utilization of Equipment—Control of Transportation Expenses Through Current Reports—Traffic and General Expenses, Taxes and Rents—Analysis of Actual Operations of Two Class I Railways in 1941—Appendix A: The Accomplishments of the United States Railroad Administration in Unifying and Standardizing the Statistics of Operation, by William J. Cunningham, Assistant Director of Operation, United States Railroad Administration (1919). Appendix B: Pictorial Summary of the Principal Sources of Railway Revenues and the Causes of Expenses as Recorded in the Accounts.

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Whether track goes over mountains, around or through them, repair work and constant maintenance are uppermost in the minds of hundreds of important railroad executives. These are the men who with their well-run departments are held responsible for keeping roadbeds in first class condition. These men make travel by rail safer.

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THE NATIONAL LOCK WASHER COMPANY, NEWARK 5, N. J., U. S. A.

A COMPLETE LINE OF RAILWAY SPRING WASHERS

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# STEEL ROLLING DOORS

STEEL ROLLING DOORS bring highest efficiency to service openings of every type. With smooth, easy coiling upward action, they glide out of the way overhead, safe from damage. Doorways remain clear — from jamb to jamb *and* from floor to lintel — until the doors are closed again.

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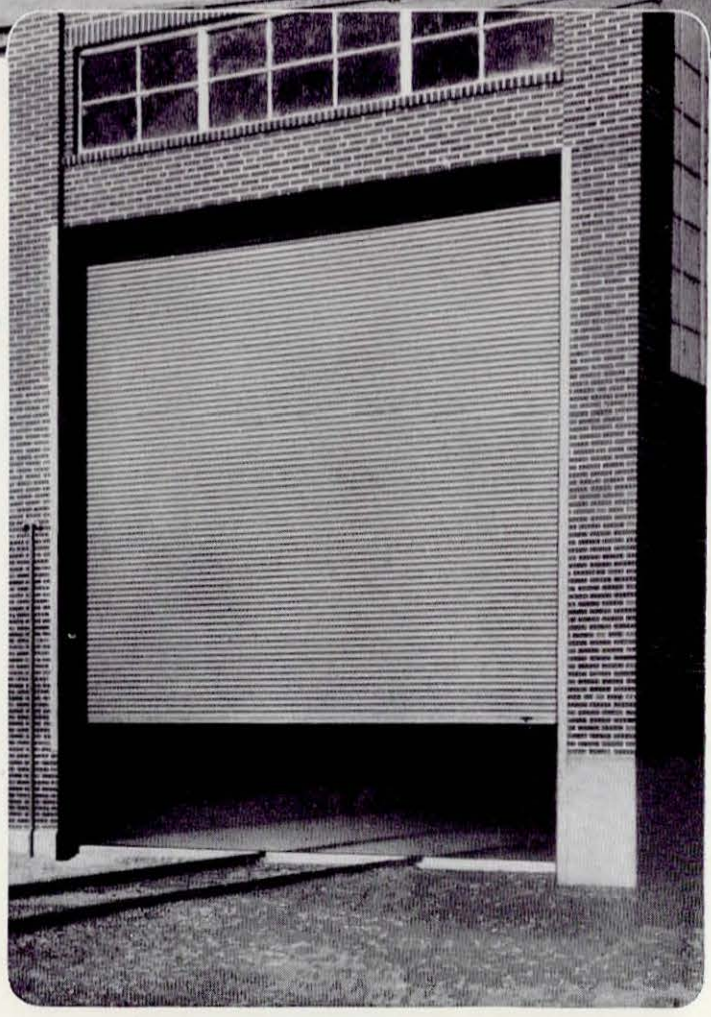

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# For maximum Diesel Performance use Vanadium Steels and Irons

You can obtain the mechanical properties required for satisfactory operation and long service life of Diesel locomotives by using Vanadium steels and irons.

Vanadium steel forgings, as well as Vanadium steel castings and Vanadium iron castings, have been designed, in each type for the best balance of mechanical properties obtainable for the service required of each specific part.

Recommended steel and iron compositions are given in the accompanying list for a variety of parts, many of which have already established satisfactory service records. A choice of materials is shown in some instances, in recognition of preference and of those variations in design and type of service which govern the properties required.

The metallurgical engineers of the Vanadium Corporation of America realize that each part is an individual problem, and they are prepared to cooperate with you to the fullest extent in selecting the best material for each application.

| PART | MATERIAL |
|---|---|
| SPRINGS | Cr-V (SAE 6150) steel<br>Cr-Mo-V steel<br>Si-V steel<br>Cr-W-V steel |
| CRANKSHAFT | SAE 4140+V<br>SAE 4340+V<br>Cr-V (SAE 6140) steel |
| AXLES | C-V steel<br>Cr-V (SAE 6145) steel<br>Mn-V steel |
| GEARS AND PINIONS | Cr-V (SAE 6145) steel |
| CONNECTING RODS | Cr-V (SAE 6135) steel<br>Cr-V (SAE 6140) steel |
| BOLTS | Cr-V (SAE 6135) steel<br>Mn-Cr-V (Normalloy) steel |
| PISTON PINS | Cr-V (A 6120) steel |
| WHEELS | C-V steel<br>Cr-V steel<br>Mn-V steel<br>Mn-Cr-V steel |
| CRANKCASE | Mn-Mo-V cast steel<br>Mn-V cast steel<br>Mn-V plate steel (welded) |
| INJECTOR TIPS | Cr-V (SAE 6145) steel |
| OIL PAN BED | Mn-Mo-V cast steel<br>Mn-V cast steel<br>Mn-V plate steel |
| TRUCK FRAME AND BOLSTER | C-V cast steel<br>Ni-V cast steel<br>Mn-Ni-V cast steel<br>Mn-V cast steel<br>Mn-V plate steel (welded)<br>Mn-Mo-V plate steel (welded) |
| TRAILING TRUCK CASTINGS | Mn-V cast steel<br>Ni-V cast steel |
| COUPLERS | Mn-V cast steel |
| BRAKE RIGGING CASTINGS | Mn-V cast steel |
| COMMUTATOR SPIDER CASTINGS | Mn-V cast steel |
| CYLINDERS | Cr-V cast iron (Cr added as V-5*) |
| CYLINDER HEADS | Mo-V cast iron, Graphidox-treated**<br>Ni-Mo-V cast iron<br>Cr cast iron (Cr added as V-5*) |
| CYLINDER LINERS | Ni-Cr-Mo cast iron, Graphidox-treated** (quenched)<br>Cr-Mo-V cast iron |
| PISTONS | Cr cast iron (Cr added as V-5*)<br>Mo-V cast iron, Graphidox-treated** |

**V-5 is an iron foundry alloy for reduction of chill and promotion of uniformity throughout heavy sections.*

***Graphidox is a graphitizing and deoxidizing alloy.*

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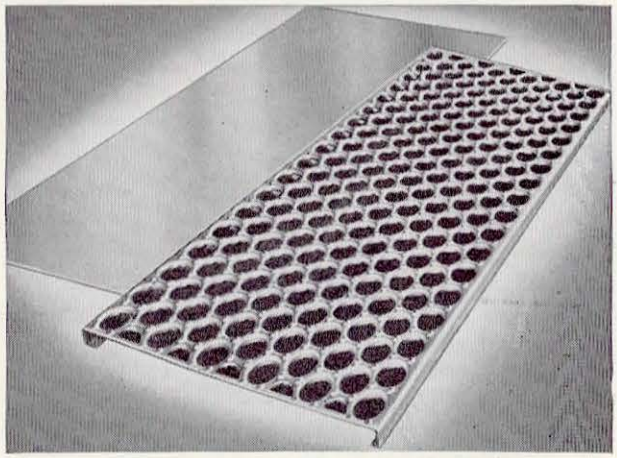
## REPLACE UNSAFE WOODEN RUNWAYS WITH MORTON "OPEN-GRIP" METAL RUNNING BOARDS

Safety-minded railroads are avoiding accident risks on running boards, where a slip or misstep by any trainman may cause a bad fall, by installing Morton "Open-Grip" metal running boards. They're thrifty in service and in *slip-insurance* . . . easy and quick to install . . . last the lifetime of the car . . . nothing to split or warp or splinter . . . no parts to work loose . . . do not collect snow or rainfall. Next time your freight cars go to the shop for repair or overhaul, begin at the top and replace unsafe running boards with grips that give the safest footing. Specify Morton "Open-Grip" runways —the modern type—when you order new freight cars. Write for full information.



**IMPORTANT! One-piece Construction**

No lock-joints, bolts, rivets or welds in Morton "Open-Grip" runways. They are formed from solid sheets of heavy gauge metal; installed with simple cup and bolt device, designed to avoid precision work, fitting or matching of application holes.

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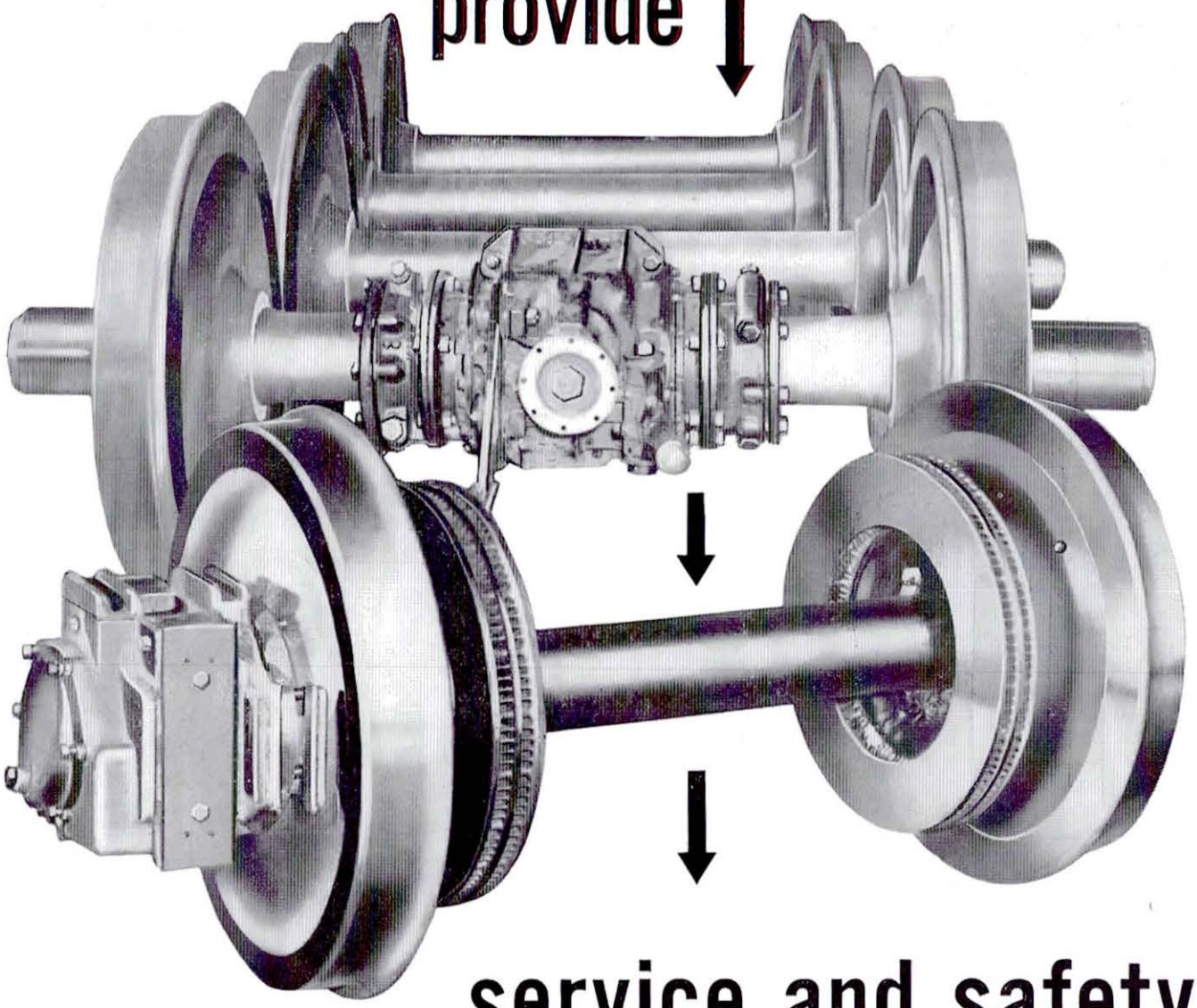
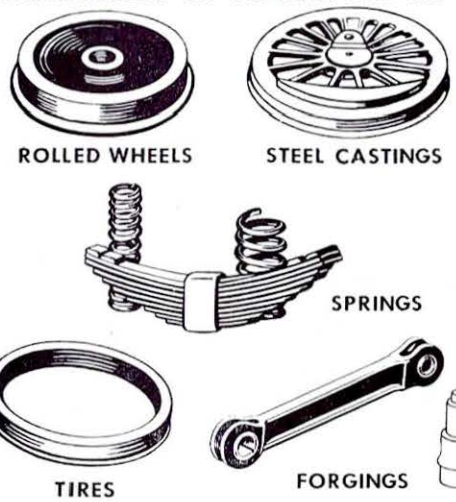
WEST LAKE STREET • CHICAGO 44, ILLINOIS

# STANDARD STEEL WHEELS provide



# service and safety

**Standardize on STANDARD for**




Available in all standard A.A.R. sizes, Standard Steel Works' rolled steel wheels are engineered to meet the maximum service and safety requirements imposed by today's high speeds and heavy loads. Scientific control of every operation, from initial melt to finished product, insures uniformity and quality. Rolled steel wheel centers, and high-strength rolled steel blanks for main drive gears in diesel locomotives, are also available.

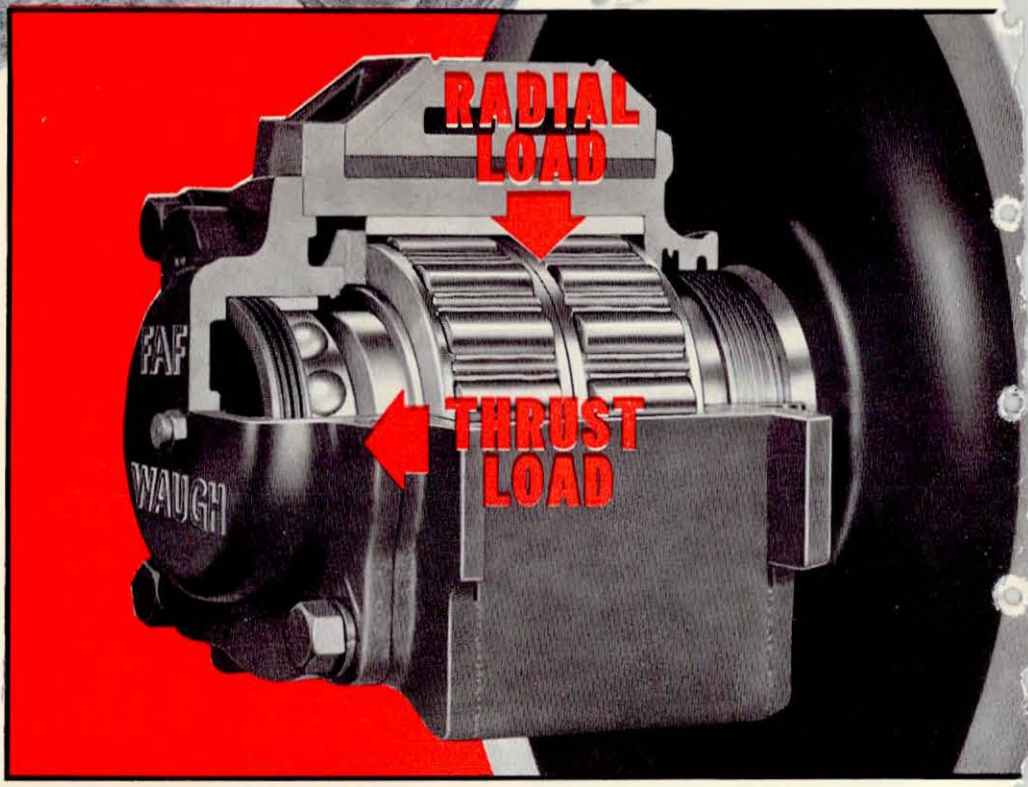
## BALDWIN

### STANDARD STEEL WORKS DIVISION

The Baldwin Locomotive Works, Standard Steel Works Division, Burnham, Pa., U.S.A. Offices: Boston, Chicago, Cleveland, Houston, New York, Philadelphia, Pittsburgh, San Francisco, Seattle, St. Louis, Washington.

# Off again.. on again

easy as




# FAFNIR WAUGH

## TWIN BEARINGS

FAFNIR WAUGH TWIN BEARINGS FOR RAILWAY JOURNALS

# A big saving in time, application costs and inventory

All railroad mechanical officers and purchasing agents are familiar with the problem of "spares" and replacements. When buying Journal Bearings, this question is particularly serious, since, in some instances, it is necessary to purchase two spare journal bearings for each spare axle . . . a costly investment. Happily, this situation does not apply in the case of Fafnir-Waugh Twin Bearings.

*With Twin Bearings, only spare inner races and oil seals are required for spare axles.*

The Bearings themselves, completely assembled can be applied and removed as readily as a conventional bearing. No presses are required to put them on or take them off. There are no costly spare parts, no long delays.

When wheels must be turned, just remove the bearings without special tools and apply just as easily to the replacement axles, quickly, smoothly, economically. This convenience and economy of application is but another one of the important features of Fafnir-Waugh Twin Bearings.

Specify TWIN Bearings on your next order.

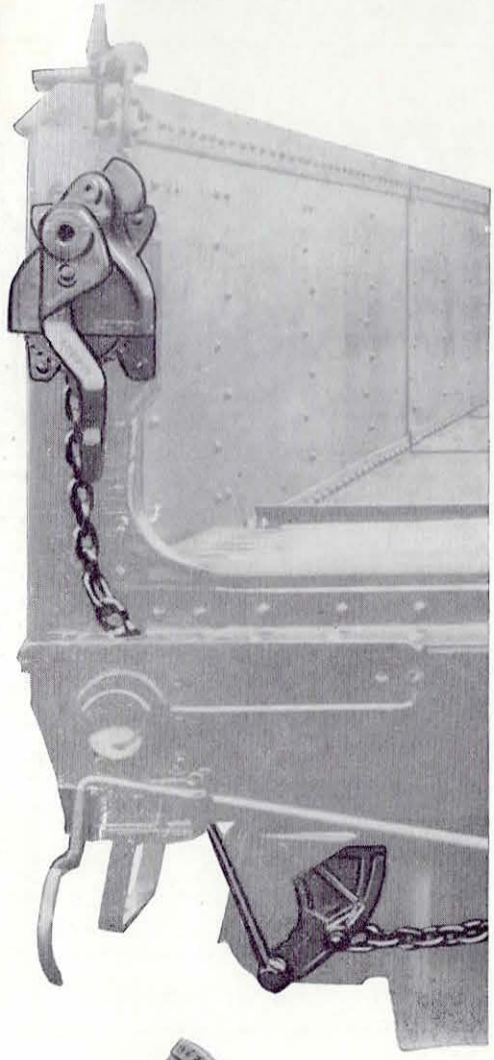
**FAFNIR-WAUGH BEARINGS DIVISION**

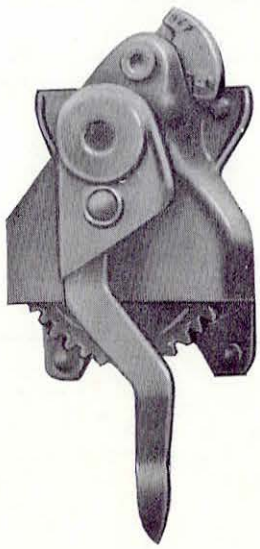
## WAUGH EQUIPMENT CO.

NEW YORK • CHICAGO • ST. LOUIS • SAN FRANCISCO

*"None better... simplicity itself"*

# EQUIPCO PUMP-HANDLE BRAKE FOR DROP-END GONDOLA CARS





The Equipco Pump-handle Brake is especially designed for drop-end gondola cars. Although both vertical wheel and pump-handle type brakes have been used on this type of car, experience has proven the Pump-handle Brake to be the only brake which can be SAFELY and CONVENIENTLY operated. The Equipco Pump-handle Brake places operator in a SAFE, CONVENIENT operating position, within the car sides.

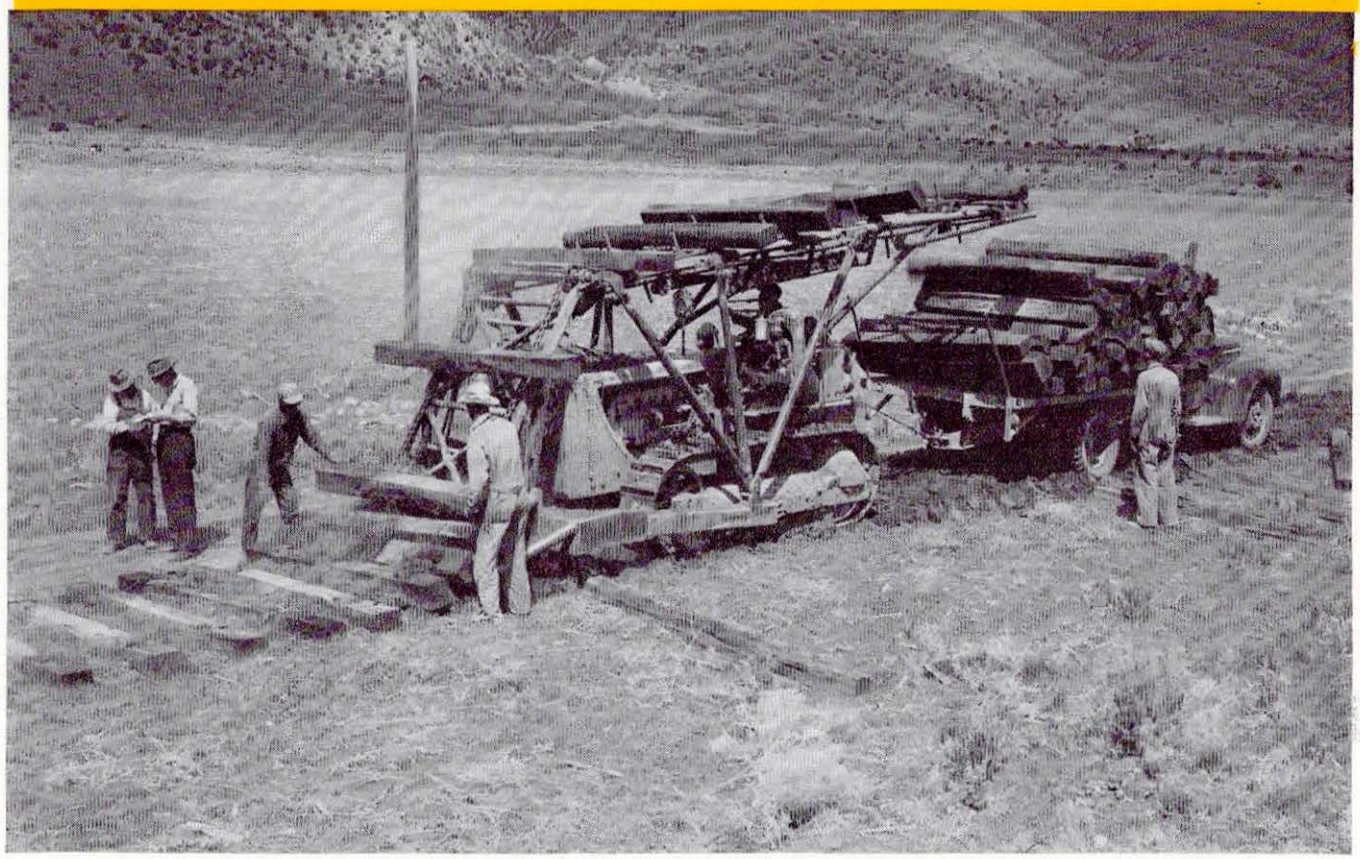
Vertical Wheel Brakes, on the other hand, create definite SAFETY HAZARDS to trainmen. They require: operation from side ladder; a SPECIAL mounting plate which projects excessively toward adjacent car, and a SPECIAL, deep striker casting to provide safety clearance between the projecting plate and adjacent car. Side ladder operation of any hand brake is dangerous and the original, proposed Specifications for Hand Brakes prohibited such operation.* To avoid the dangers of side ladder operation, the operator must climb precariously around the brake and mounting plate, to reach the brake platform (IN MANY CASES NOT PROVIDED). If a platform is provided and he reaches it, he finds himself facing the back of the brake; he has nothing to hold on to while operating the brake; has the poorest of leverage; he must turn the brake wheel in counter-clockwise direction and operate the release lever in reverse to that on any other vertical brake—these reversals of operation being contrary to one of the most important objects of the Brake Specifications—the STANDARDIZATION OF OPERATION of all hand brakes of a given type.

The Equipco Pump-handle Brake is less expensive to install; requires no special mounting plate or striker casting; operates in accordance with A. A. R. Specifications and cannot be operated from side ladder.

*A. A. R. Circular D.V. 846 of 5/27/35.

**EQUIPMENT SPECIALTIES DIVISION**
**of Union Asbestos and Rubber Company**
**332 South Michigan Ave. Chicago, Illinois**

# TIE SCORE
# —2100 ties plus per day!



Where there's "Caterpillar" Diesel equipment, there's a way of getting things done quickly, efficiently, economically. Take this unusual job, for instance, in the San Pete Valley on a branch line of the Denver & Rio Grande Western Railroad between Moroni and Nephi, Utah.

Here you see a "Caterpillar" Diesel D6 Tractor with a specially built tie loader picking up ties and loading them on a truck. The tractor operator has dual control of the operation. With one cable of the double drum cable control, he keeps the truck in good tie-spotting position. With the other, he controls the "C" frame. In eighteen working days, the D6 picked up 38,000 ties — an average of more than 2100 per day — keeping five trucks busy as ants on a five-mile haul.

Foreman H. M. Emery of the Morrison-Knudsen Co., Inc., Boise, Idaho, states: "The 'Caterpillar' Diesel D6 Tractor is very economical to run. We used the clutch every five feet of motion with never a minute's trouble. I like everything about it. It's swell, as are all 'Caterpillar' products."

In addition, this D6 was used as a switch engine on rails at Logan for three weeks. It pulled five flat cars, one stock car and two low cars with draglines loaded on. That's typical of "Caterpillar" versatility. A mainstay on the right of way, it can turn its hand to a score of chores for you — and do each one at low cost and well!

**CATERPILLAR TRACTOR CO. • PEORIA, ILLINOIS**

**CATERPILLAR**
REG. U. S. PAT. OFF.
**DIESEL** ENGINES • TRACTORS
MOTOR GRADERS
EARTHMOVING EQUIPMENT

# By building freight cars lighter with U·S·S COR-TEN...

# You can save steel now and

● With U·S·S Cor-Ten—*the steel that does more*—freight equipment can readily be built 22% lighter. This 22% average saving in steel makes it possible to get 28% *more* units from every ton of steel used.

In 1947, when more than 19,000 Cor-Ten cars were ordered, the steel saved by Cor-Ten construction meant a bonus production of 3000 to 4000 more cars than could have been built from an equal tonnage of carbon steel.

Last year more than 100,000 new freight cars went into service, yet, believe it or not, about 75% of them were still of conventional heavy construction. These out-moded cars, which average 2 tons heavier than need be, will not only permanently drag around a cost-increasing load of useless dead weight, but they required at least 150,000 extra tons of badly needed steel to produce them.

With steel still in short supply, there are cogent reasons why railroads and car builders should save steel wherever possible—and it can be done by building freight equipment lighter with U·S·S Cor-Ten.

## COR-TEN construction does more than save steel

The weight saved in Cor-Ten freight cars is directly reflected in other savings that continue for the life of the equipment.

Because they are lighter, Cor-Ten cars reduce operating costs by requiring less fuel and less motive power to move them. Because they haul added payload in place of dead weight, they save in the number of cars required to haul a given amount of freight. And because U·S·S Cor-Ten has 4 to 6 times greater resistance to atmospheric corrosion than plain steel, and is stronger, tougher and more resistant to impact, these lighter Cor-Ten cars stand up better—and you save on maintenance and repairs as well.

### *Consider these facts*

By reducing weight with Cor-Ten you save steel and you get *more* cars from the steel available. And you get *better* cars—cars that are more profitable to operate, not only when new but throughout their longer life.

AMERICAN STEEL & WIRE COMPANY, GENERAL OFFICES: CLEVELAND, OHIO
CARNEGIE-ILLINOIS STEEL CORPORATION, PITTSBURGH & CHICAGO
COLUMBIA STEEL COMPANY, SAN FRANCISCO · NATIONAL TUBE COMPANY, PITTSBURGH
TENNESSEE COAL, IRON & RAILROAD COMPANY, BIRMINGHAM
UNITED STATES STEEL SUPPLY COMPANY, WAREHOUSE DISTRIBUTORS, COAST-TO-COAST
UNITED STATES STEEL EXPORT COMPANY, NEW YORK

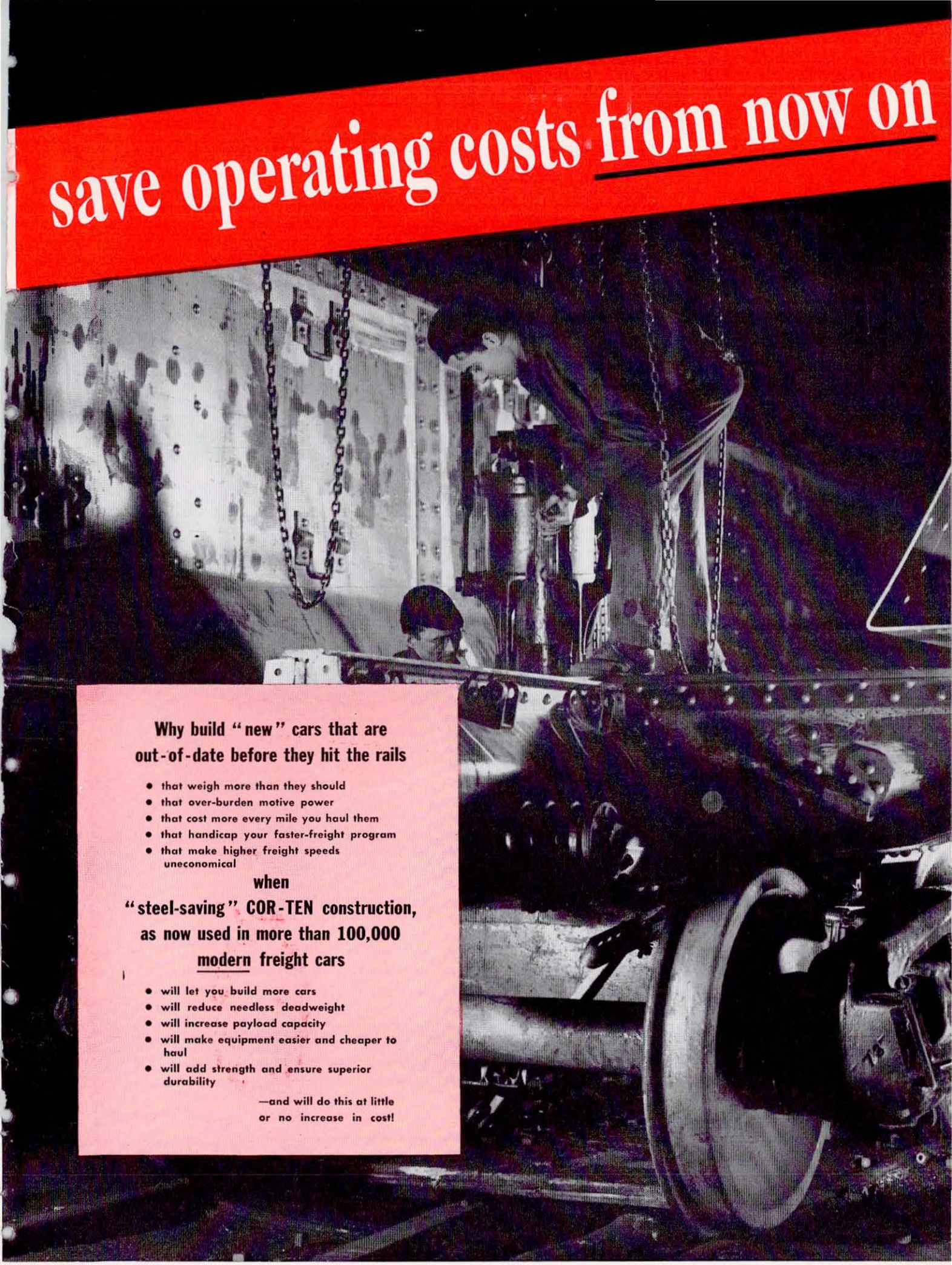
8-1108

**U·S·S HIGH STRENGTH STEELS**

U·S·S COR-TEN · U·S·S MAN-TEN · U·S·S ABRASION-RESISTING · U·S·S MANGANESE-NICKLE-COPPER

UNITED STATES STEEL

# save operating costs from now on



**Why build "new" cars that are out-of-date before they hit the rails**

- that weigh more than they should
- that over-burden motive power
- that cost more every mile you haul them
- that handicap your faster-freight program
- that make higher freight speeds uneconomical

**when**

**"steel-saving" COR-TEN construction, as now used in more than 100,000 modern freight cars**

- will let you build more cars
- will reduce needless deadweight
- will increase payload capacity
- will make equipment easier and cheaper to haul
- will add strength and ensure superior durability

—and will do this at little or no increase in cost!

UNITED STATES STEEL

# "THE WALL STREET"

by Reading Lines

Comfortable Club Car on "The Wall Street".

## STANDARD STOKER EQUIPPED

From the cowcatcher of the locomotive, to the signal light bracket on the last car, the "Wall Street" is a READING Train. This all coach train, with the deluxe features commonly associated with modern parlor cars, was built in the READING shops by READING men. It provides comfort travel on the Philadelphia-Jersey City Run. It's the first of three new READING Trains to be put into service on different runs. We are proud to report that the "Wall Street" is STANDARD STOKER EQUIPPED.

THE STANDARD STOKER COMPANY, INC

NEW YORK • CHICAGO • ERIE • MONTREAL

SSS

★ How Sperry Research Contributes to Railroad Safety

# "The World's Worst Railroad"

## IS DEDICATED TO GREATER RAIL SAFETY

Five hundred yards of typically defective rail runs close to the Sperry plant. It is the Sperry Rail Service research track, and is laid with defective rails selected from the hundreds of thousands of miles of track tested by Sperry Detector Cars.

Every type of rail defect, big and small, is represented...transverse defects...engine burn fractures...vertical and horizontal split heads ...shelly rail and flowed rail.

On this, the "world's worst railroad," new operators of Sperry Detector Cars are trained... equipment is checked and rechecked for accuracy. The perfect combination of highly skilled technicians and sensitive equipment is achieved.

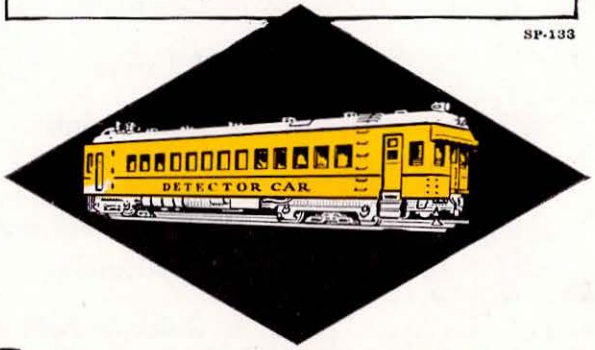
This is but one aspect of Sperry's research, dedicated to helping America's progressive railroads achieve the best in rail safety through the best in rail testing.

**REMEMBER**

**Only Sperry consistently detects small transverse defects.**

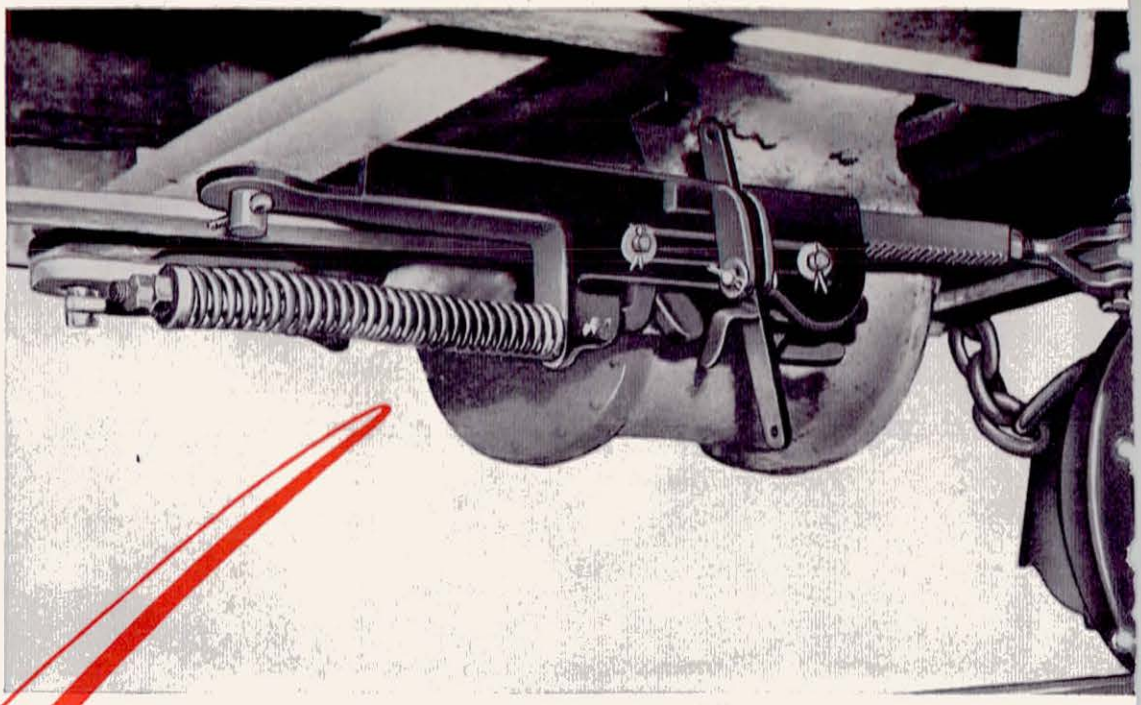
**Only Sperry consistently detects longitudinal defects.**

SP-133

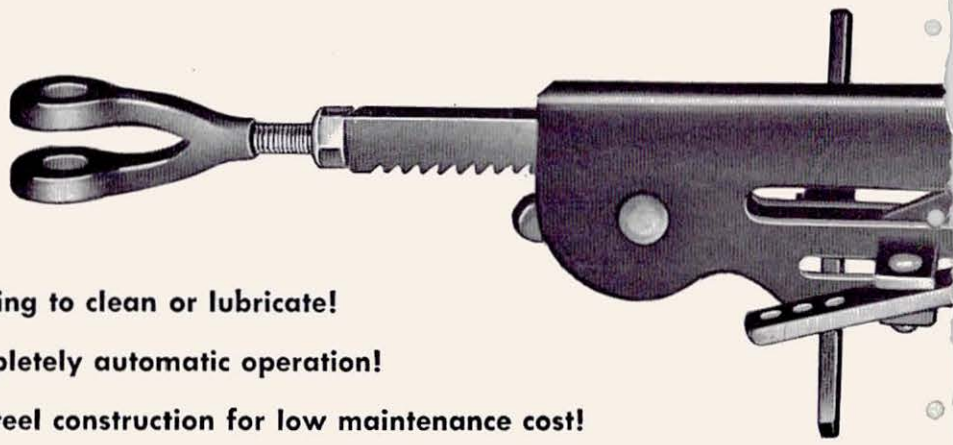



# SPERRY RAIL SERVICE

**DIVISION OF SPERRY PRODUCTS, INC.**
**DANBURY, CONN.**



# *Announcing the* AUTOMATIC



- Nothing to clean or lubricate!
- Completely automatic operation!
- All steel construction for low maintenance cost!
- Light weight... only approximately 28 lbs. added to weight of car!
- No manual adjustments of piston travel necessary after initial application!
- Quick, simple installation... adjuster merely replaces cylinder lever connecting rod. No brackets!

OTHER SPRING PACKING PRODUCTS

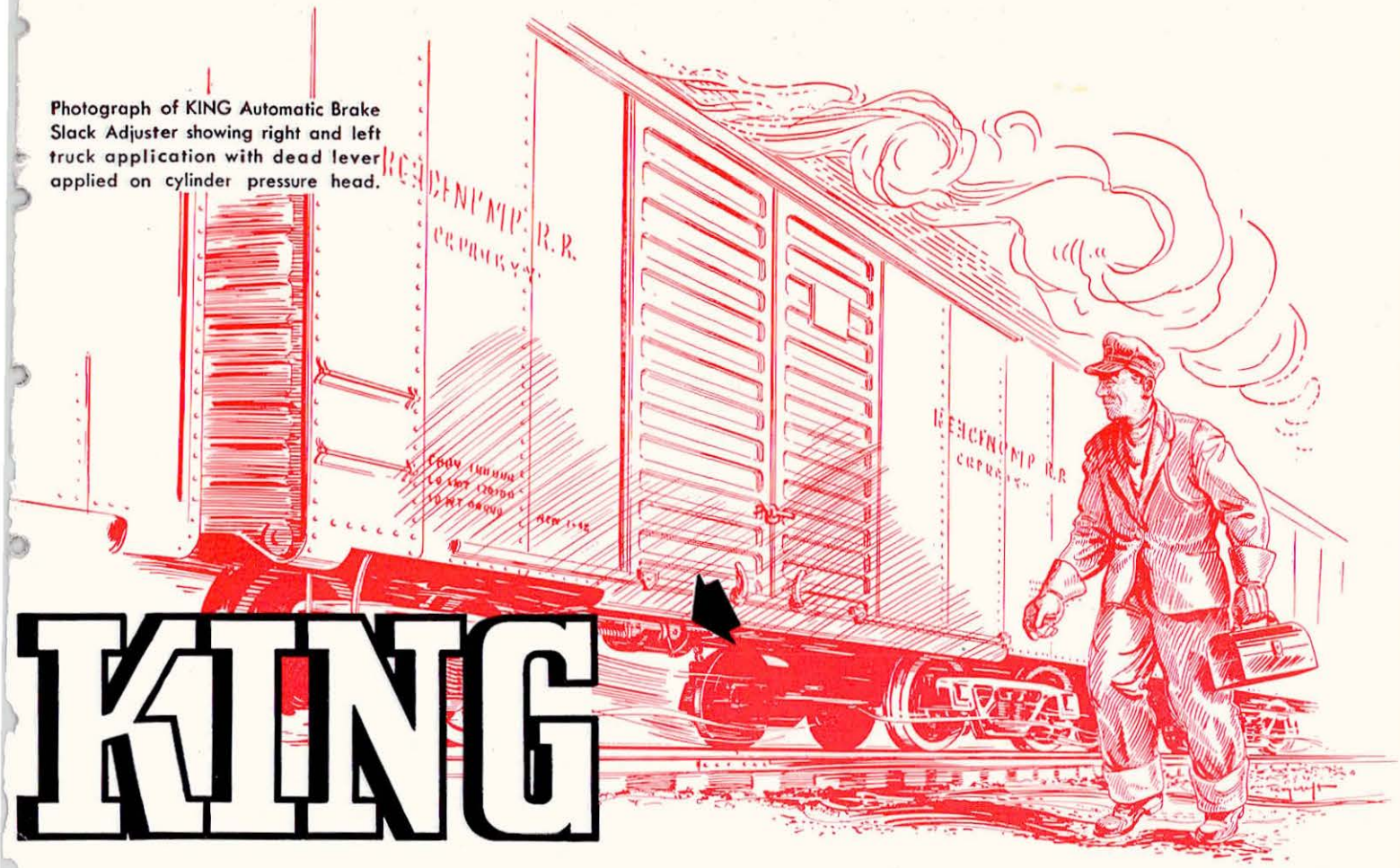
Hold-Rite Packing Retainer

Spring Packing

Plastic Armor

Everseal Metallic Packing

Photograph of KING Automatic Brake Slack Adjuster showing right and left truck application with dead lever applied on cylinder pressure head.



# KING

# BRAKE SLACK ADJUSTER

(Pat. Applied For)

*For Better Braking Power on Heavily Loaded Cars*

Alert railroad men will welcome the new brake safety factor, the simplicity of construction, the foolproof operation and the low installation and maintenance costs built into this Spring Packing Corporation product.

Tested and proven, the KING Automatic Brake Slack Adjuster keeps brake equipment operating under all circumstances at maximum efficiency in accordance with the original design of the brake manufacturer . . . an especially desirable feature on heavily loaded cars. Also, the adjuster eliminates the hazard of men getting under the car to release slack in the brake rigging to renew brake shoes, or to adjust brakes.

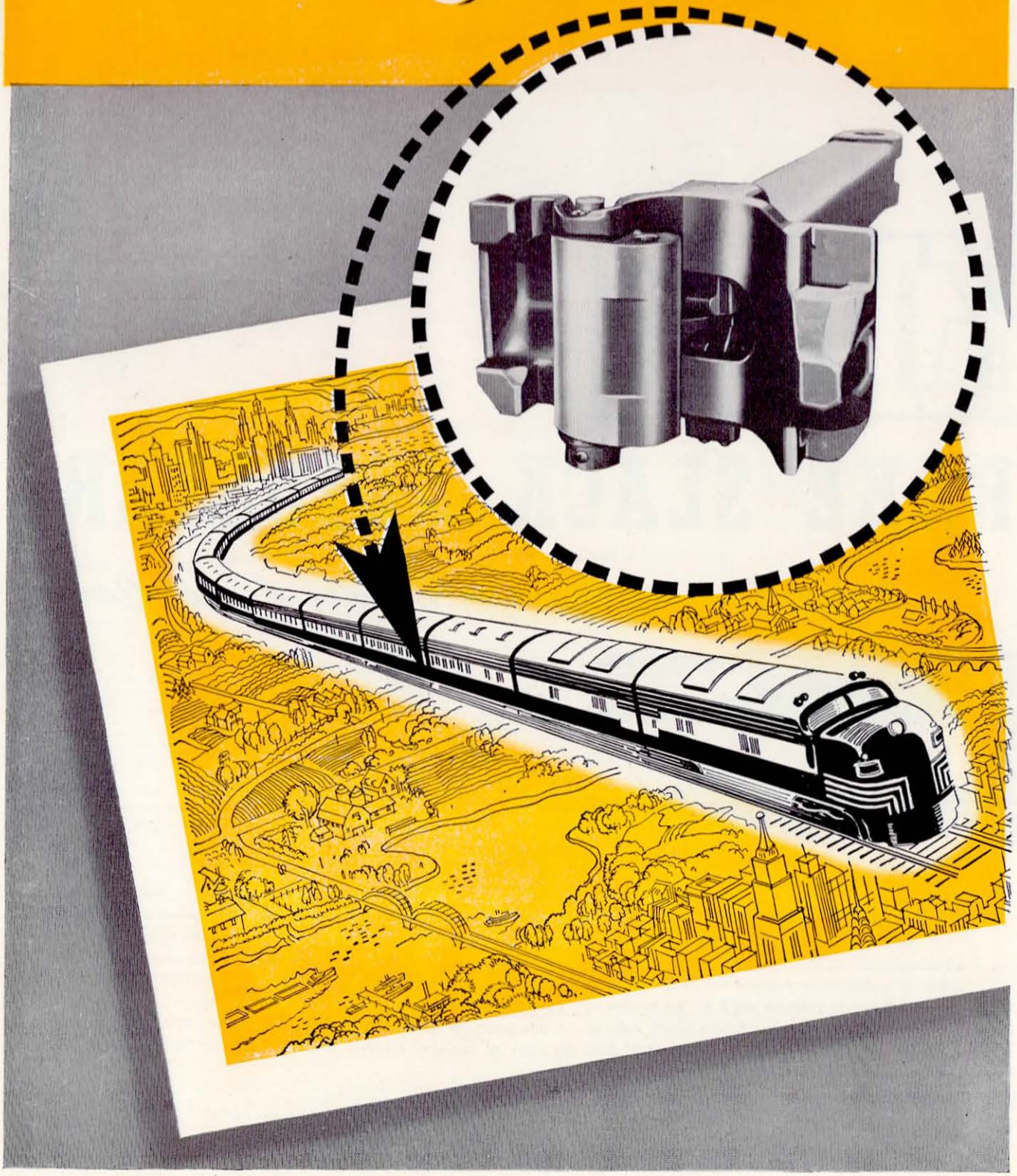
The KING Automatic Brake Slack Adjuster is designed for all box, flat, hopper and gondola freight cars, for cars equipped with vacuum brakes, and for cars of unusual design. It is inexpensive! Write today for complete information.

*For 29 Years* *the Standard*

**SPRING PACKING CORPORATION**

122 SOUTH MICHIGAN AVENUE, CHICAGO 3, ILLINOIS

# Passenger Comfort



# needs more than "frills"

Certainly — attractive, modern trains appeal to passengers. Their bright, shining exteriors and their tastefully decorated interiors bring a new pleasure to travel. So do air conditioning, good dining service and many other *surface* luxuries.

But the real test is in the smoothness and safety of the ride — the freedom from bump and bounce, swing and sway. This is basic, *under-the-floor* progress, which is being built into an ever-increasing number of trains with Tightlock Couplers — by NATIONAL.

**NATIONAL MALLEABLE AND STEEL CASTINGS COMPANY**

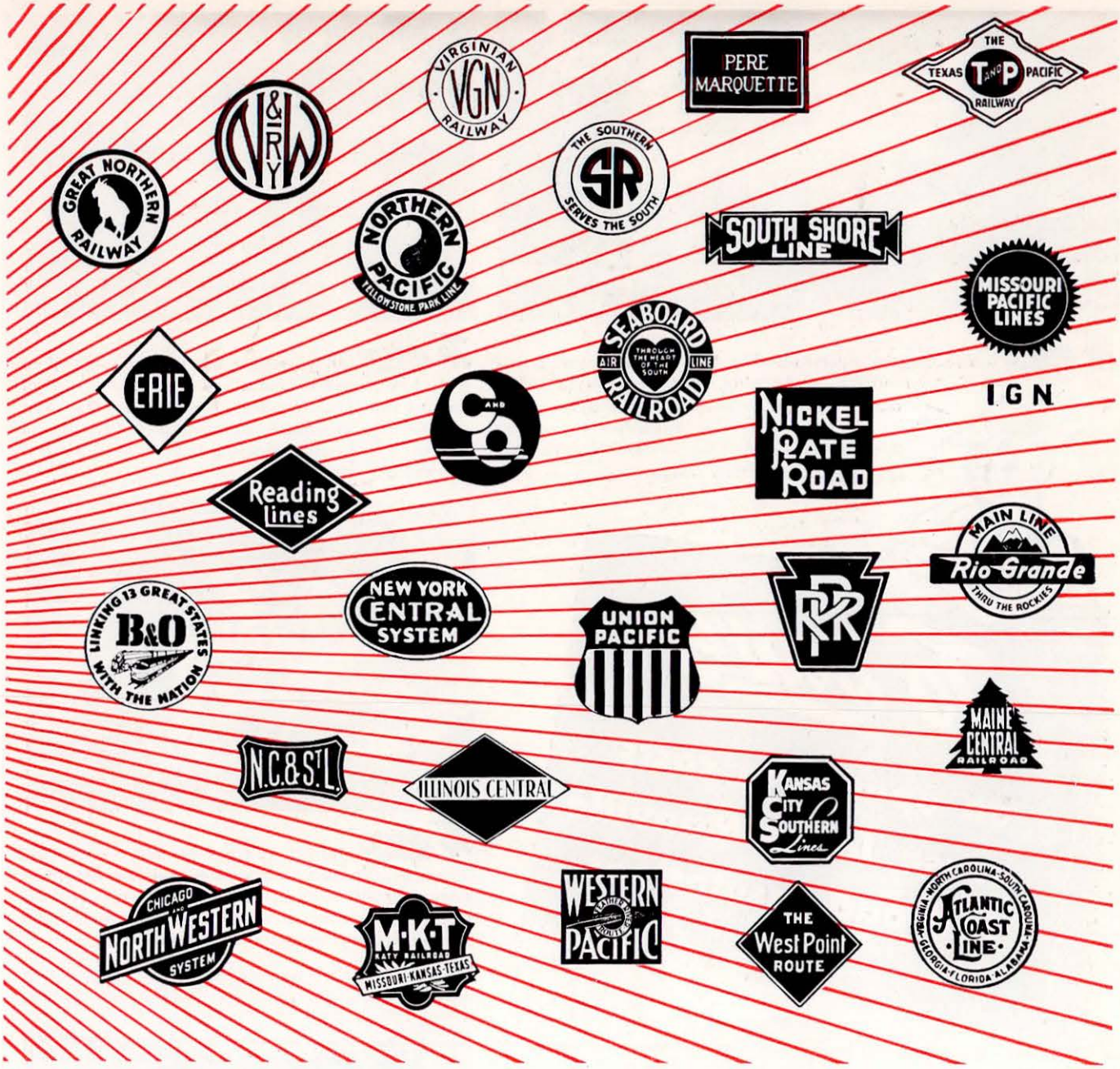
*Cleveland, Ohio*

NATIONAL Products FOR TRANSPORTATION AND INDUSTRY

M&S Co. Est. 1868

# NEARLY ALL Major American Roads Use Adlake Breather Windows

Adlake
TRADE MARK




**PLEASED PASSENGERS** pay dividends in expanding passenger traffic. That's why nearly all major American railroads are increasing passenger comfort with Adlake Double-Glazed Breather Windows.

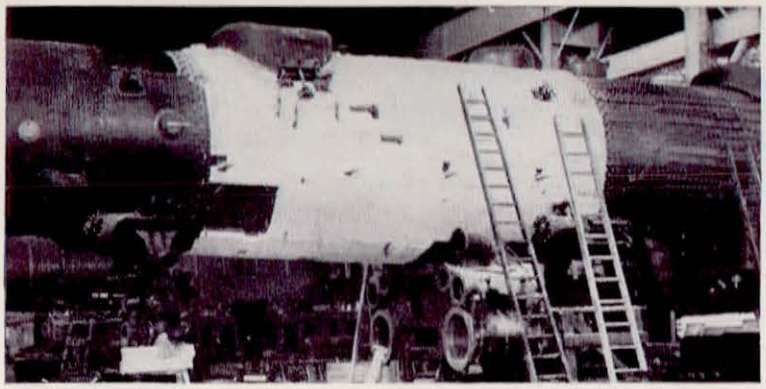
Adlake Windows are always crystal-clear, giving your customers an unobstructed view of passing scenery. The "breather" device permits air between the two panes of glass to adjust quickly to changes in temperature, altitude and humidity. In effect, you "LET THEM SEE THE SCENERY YOU ADVERTISE" when you use Adlake Breather Windows.

Therefore, in planning your passenger car program for 1949, be sure you specify "ADLAKE breather type sash units" for either new or reconditioned cars. You can be confident they will pay off in passenger good will. For full information address: 1109 North Michigan, Elkhart, Indiana.

## THE Adams & Westlake COMPANY

Established 1857 • ELKHART, INDIANA • New York • Chicago

**Manufacturers of Adlake Specialties and Equipment for the Railroad Industry**

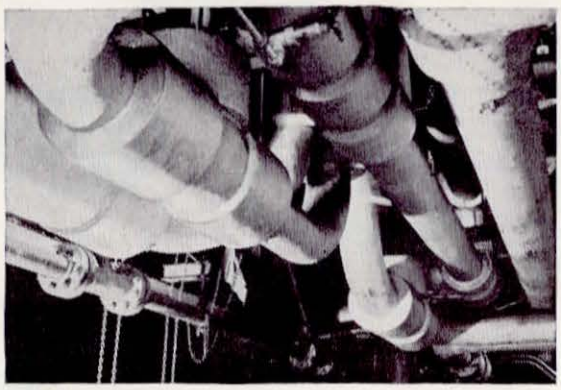


**To save** on locomotive operation—Use J-M 85% Magnesia Locomotive Boiler Lagging. Combines high insulating value with light weight and the ability to retain its efficiency in service. Furnished in various thicknesses, curved or flat, straight or tapered, to permit snug fit to boiler surfaces.

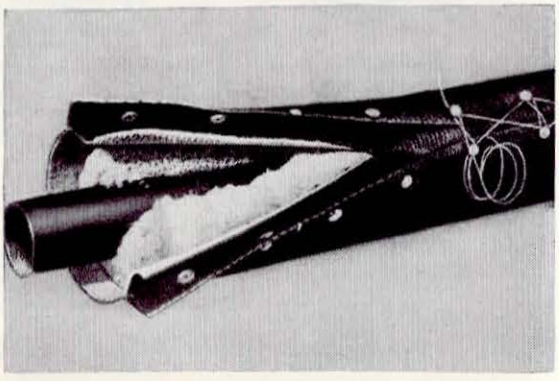
## ...there is a type for every railroad requirement...

Johns-Manville manufactures many types of insulations for railroad use...for refrigeration cars, cold-storage rooms, tank cars, air-conditioning systems, locomotive fire-boxes, soundproofing. In addition, the completely equipped Johns-Manville Insulation Laboratories are available to help you find answers to new insulation problems. For further details, write Johns-Manville, Box 290, New York 16, N. Y.

**To save** on passenger car operation—Insulate with J-M Stonefelt blankets for permanently high thermal insulation efficiency, lower air conditioning costs over the years. Stonefelt retains its rated thickness . . . won't settle with vibration. In addition, it is both fire- and moisture-resistant.



**To save** on power plant operation—Use 85% Magnesia, the most widely used insulation for steam lines up to 600° F. Light in weight, uniform in composition, it keeps fuel costs low, provides dependable insulation that often outlasts the installation.



**To save** on train operation—Use J-M Train-Line Insulations for steam piping, and hot and cold water and air-conditioning lines. Made of materials that maintain high efficiency under severe conditions of moisture and vibration and temperatures up to 450°F.

# Johns-Manville

**91 YEARS OF SERVICE TO TRANSPORTATION**

# WE'RE MAKING SPARKS FLY...

• • here on the Hulson 202 production line. Pictured you see the steel base plate being flash resistance welded to the formed-steel housing. No castings! Formed or forged steel throughout, here is an A.A.R. Certified draft gear far exceeding A.A.R. sturdiness requirements; a draft gear that will save American railroads almost a ton of tare-weight, on the average, for every eight freight cars rolling.

For money-saving, weight-saving, specify . . .

# HULSON TYPE 202

## DRAFT GEAR

A·A·R CERTIFIED

HULSON COMPANY

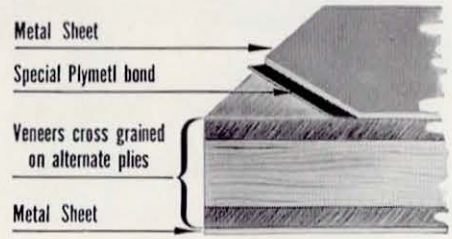
332 SO. MICHI

# HASKELITE Plymetl - KNOWN BY

As further emphasis is placed upon faster transportation with greater passenger luxury, more and more railroads are turning to Plymetl, the metal-clad plywood. For, the use of Plymetl helps to eliminate deadweight from bulkheads, partitions, frieze panels, wainscoting panels, pier panels and doors. (For example: ½" Aluminum Plymetl saves from .4 to 3 lbs. per square foot of area over other types of construction.) It increases passenger comfort because Plymetl is sound deadening and reduces vibration and wheel noises. Smooth and flat, Plymetl takes a beautiful finish.

Plymetl is highly resistant to shocks and vibration. Molded round corner sections are available to make partition installations that will harmonize perfectly with the most modern interior designs. Easily fabricated with simple machinery or hand tools, Plymetl reduces fabricating time and contributes greatly to speedier production.

Plymetl unites the best qualities of wood and metal into a structural material that is far superior to either wood or metal separately. It is produced by bonding light gauge metals to one or both sides of plywood panels. This construction effects the most efficient distribution of these materials, combining the high tensile strength qualities of the metal surfaces with the stiffness of plywood.




At right: Plymetl bulkheads and partitions give the diner on the PERE MARQUETTE, new streamliner of the Chesapeake and Ohio Railway, a clean, neat appearance.

Below: Notice how the Plymetl harmonizes with the modern design of The PERE MARQUETTE'S Club car.

HASKELITE

HASKELITE MANUFACTURING CORP. DEPT. RR, GRAND RAPIDS, MICH.

New York Chicago Detroit St. Louis Philadelphia Los Angeles

CANADA: Railway & Power Engineering Corp., Ltd.

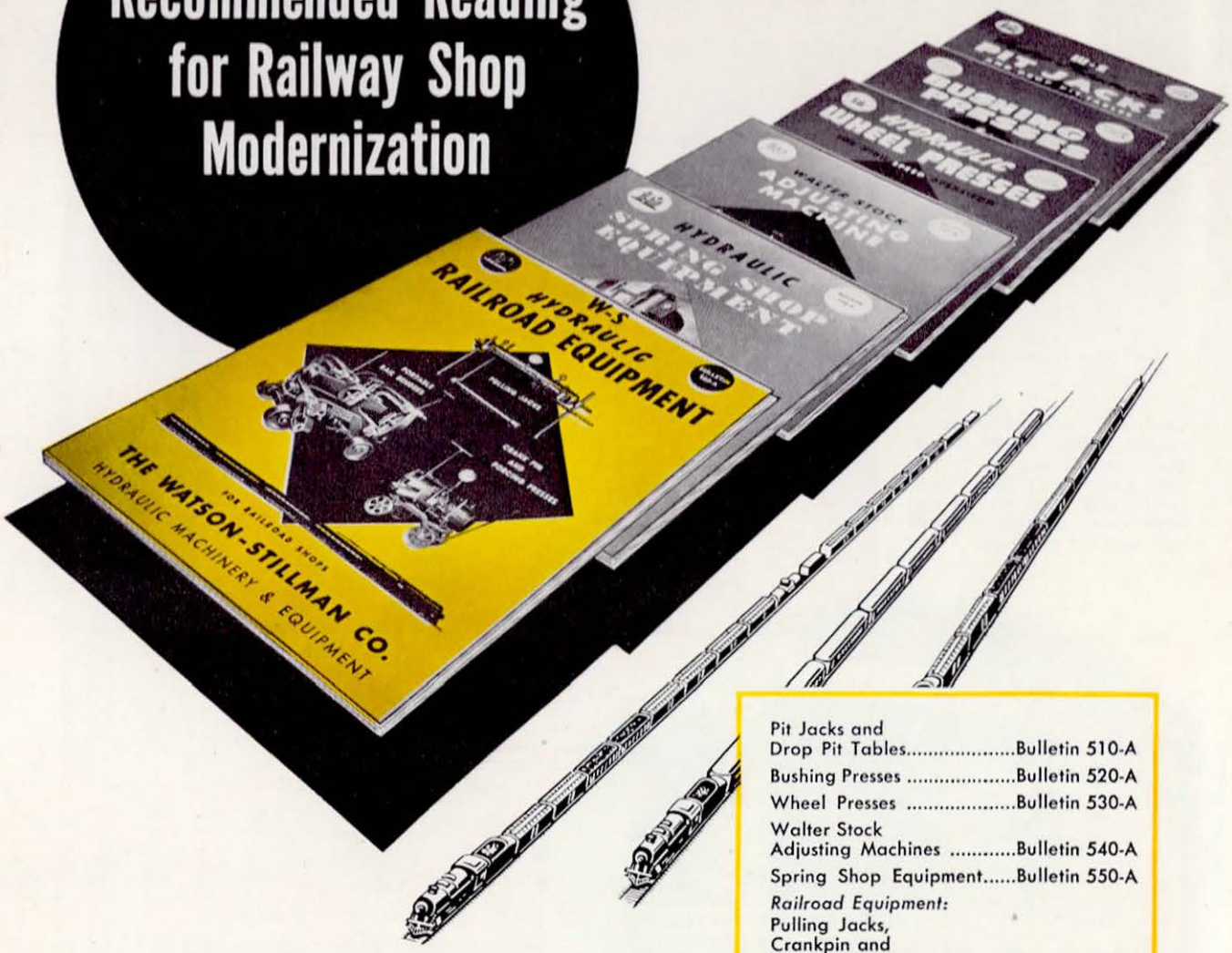
# THE COMPANY IT KEEPS

## THESE LEADING RAILROADS USE PLYMETL

Two new streamliners were recently added to the Chesapeake and Ohio Line to give their passengers a faster, more comfortable ride. In keeping with this purpose, Plymetl was used for interiors.

The new catalog: "Plan With Plymetl" contains useful information on Plymetl. Write for your free copy today.

# Recommended Reading for Railway Shop Modernization

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|---|---|
| Pit Jacks and Drop Pit Tables | Bulletin 510-A |
| Bushing Presses | Bulletin 520-A |
| Wheel Presses | Bulletin 530-A |
| Walter Stock Adjusting Machines | Bulletin 540-A |
| Spring Shop Equipment | Bulletin 550-A |
| *Railroad Equipment:* Pulling Jacks, Crankpin and Forcing Presses, Rail Benders | Bulletin 560-A |

Before you specify new hydraulic railroad shop equipment for your modernization program, send for these latest W-S Railroad Bulletins. Specifications, illustrations and descriptions will be a real aid in selecting units best suited for the job. Important facts about the many time-saving, low-cost operating features of W-S hydraulic railroad shop equipment are yours for the asking.

W-S machines are designed to meet the demand for fast-working, long-lasting maintenance tools. Check your requisitions and specifications now with this series of W-S bulletins on hydraulic shop equipment. To obtain your copies, write The Watson-Stillman Co., Roselle, New Jersey.

**WATSON-STILLMAN**

**FACTORY AND MAIN OFFICE**
ROSELLE, NEW JERSEY

BRANCH OFFICE
CHICAGO, ILL.

**REPRESENTATIVES**

CHICAGO, ILL. . . . . W. R. Walsh
DALLAS, TEX. . . . . Perry Machinery Co.
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**MANUFACTURERS OF THE MOST COMPLETE LINE OF HYDRAULIC MACHINERY**

ESTABLISHED 1848

# Maintenance Time and Costs Cut

## These 5 WAYS by

## STANDARD HD
**DIESEL OIL**

1. ***KEEPS ENGINES CLEAN***—*because* the detergent additive in Standard HD keeps fuel soot and other contaminants from settling out and forming deposits in the engine.

2. ***RESISTS ENGINE HEAT***—*because* of the effective oxidation inhibitor developed by Standard.

3. ***MAINTAINS CORRECT OIL PRESSURES***—*because* of its high Viscosity Index it resists excessive thinning out at high temperatures or thickening at low temperatures.

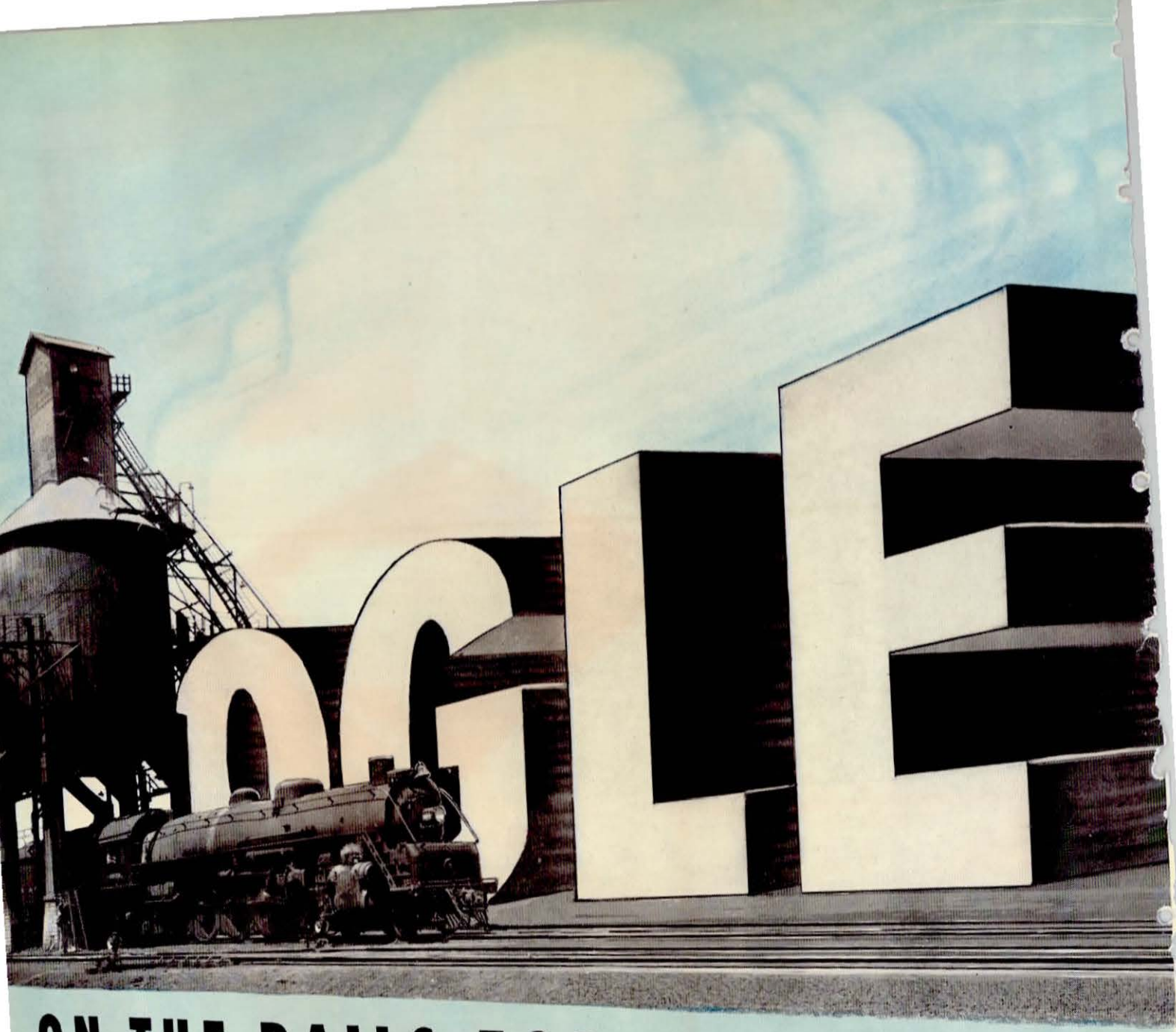
4. ***REDUCES WEAR***—*because* Standard HD provides a tough lubricating film at high temperatures.

5. ***ELIMINATES BEARING CORROSION***—*because* the additives in Standard HD inhibit the formation of corrosive oil oxidation products.

A Standard Oil Railway Sales Department representative will be glad to give you further details on the advantages of Standard HD for your operation. Standard Oil Company (Indiana), 910 South Michigan Avenue, Chicago 80, Illinois.

**STANDARD OIL COMPANY (INDIANA)**

STANDARD



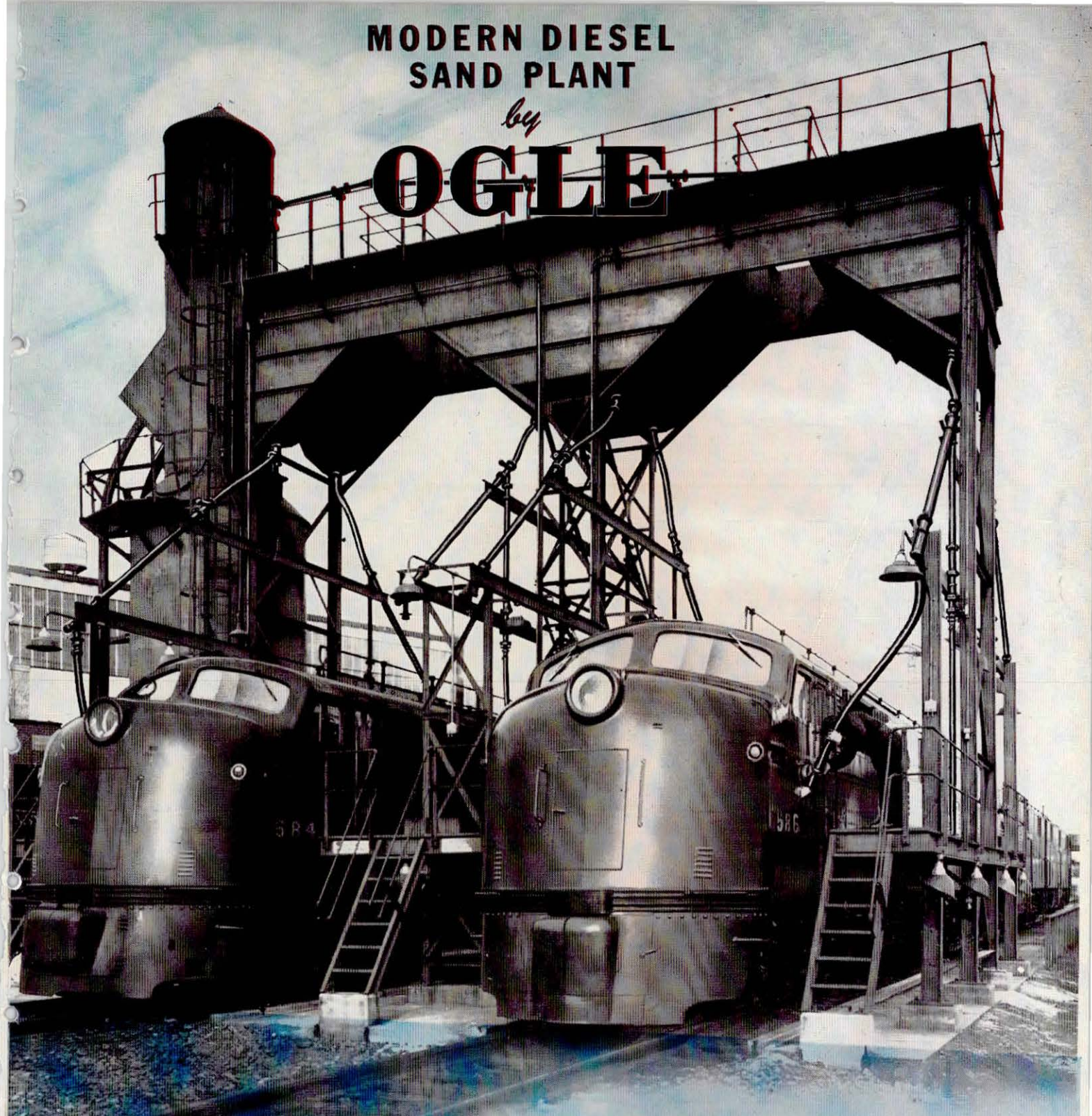
# ON THE RAILS FOR 37 YEARS

as steam locomotive service station specialists with coal, ash and sand handling plants. Now offering complete diesel sanding facilities.

# MODERN DIESEL SAND PLANT

*by*

# OGLE



**PROVIDES** elevated storage for 75 tons of wet and 40 tons of dry sand

**HOISTS** 30 tons of wet sand per hour through Ogle Automatic Skip Hoist Unit

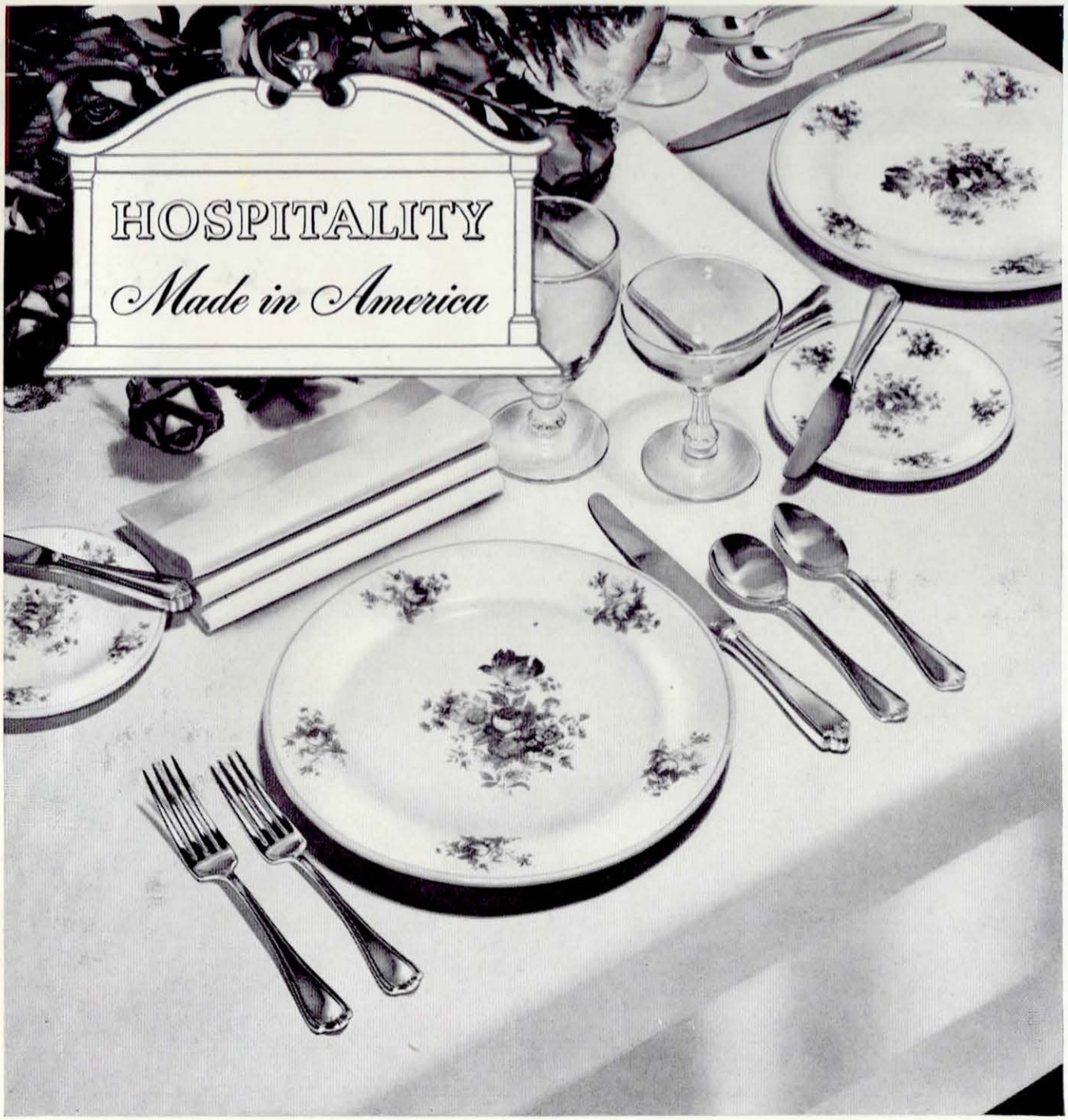
**DELIVERS** wet sand by gravity to an Ogle Steam Sand Drier

**DRIES AND SCREENS** 1-¼ tons of sand per hour

**QUICKLY SANDS** front and rear sand boxes on both sides of Diesel Road Units at one spotting, through 3" diam. quick acting, leak proof, moisture proof Ogle Diesel Sanding Nozzles

## OGLE CONSTRUCTION CO.

175 WEST JACKSON BOULEVARD, CHICAGO 4, ILLINOIS




Today, American industry supplies every essential element for attractive table appointments, including napery, of course. And, for public dining services where design, quality and value are of primary importance, these American-made products are truly outstanding.

**China:**
*"Colonial" Pattern by Syracuse China*

**Silver:**
*"Grecian" Design by International Silver Company*

**Glassware:**
*"Columbian" Pattern by Libbey Glass*

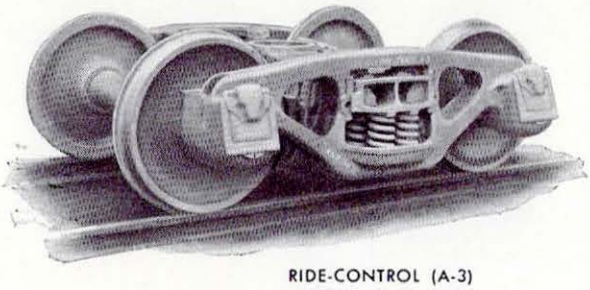
**Table Napery:**
*"Satin Band" Pattern by SIMTEX Mills*

Simtex
FORMERLY ROSEMARY

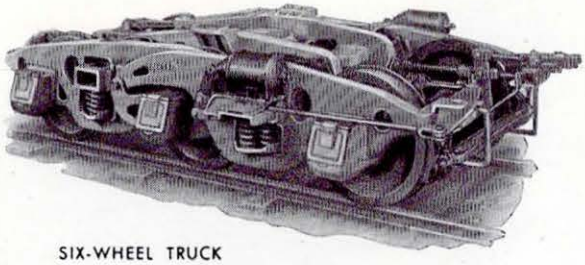
**SIMTEX MILLS** • *Division of Simmons Company* • 40 Worth Street, New York 13, N. Y.

# BUCKEYE

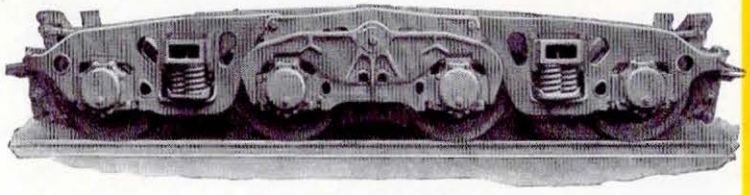
## Railway Equipment Castings



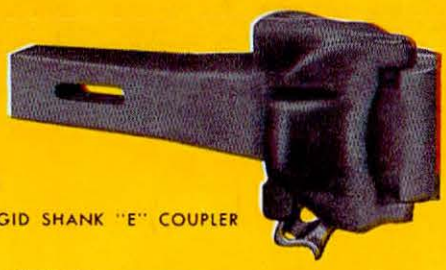
RIDE-CONTROL (A-3)
FREIGHT CAR TRUCK



SIX-WHEEL TRUCK



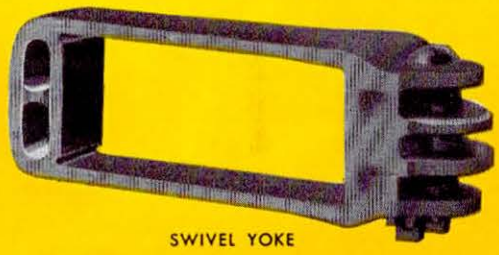
EIGHT-WHEEL TRUCK



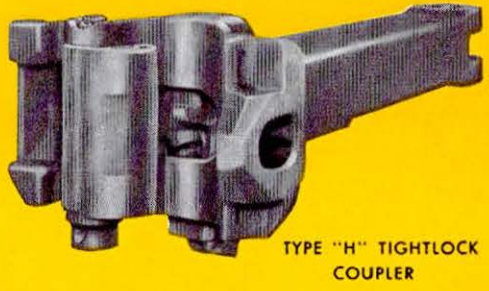
RIGID SHANK "E" COUPLER

HORIZONTAL KEYED YOKE

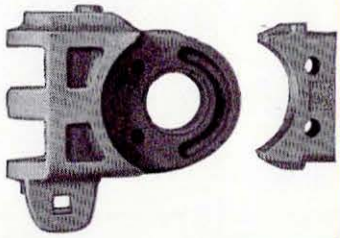
SWIVEL SHANK "E" COUPLER



SWIVEL YOKE



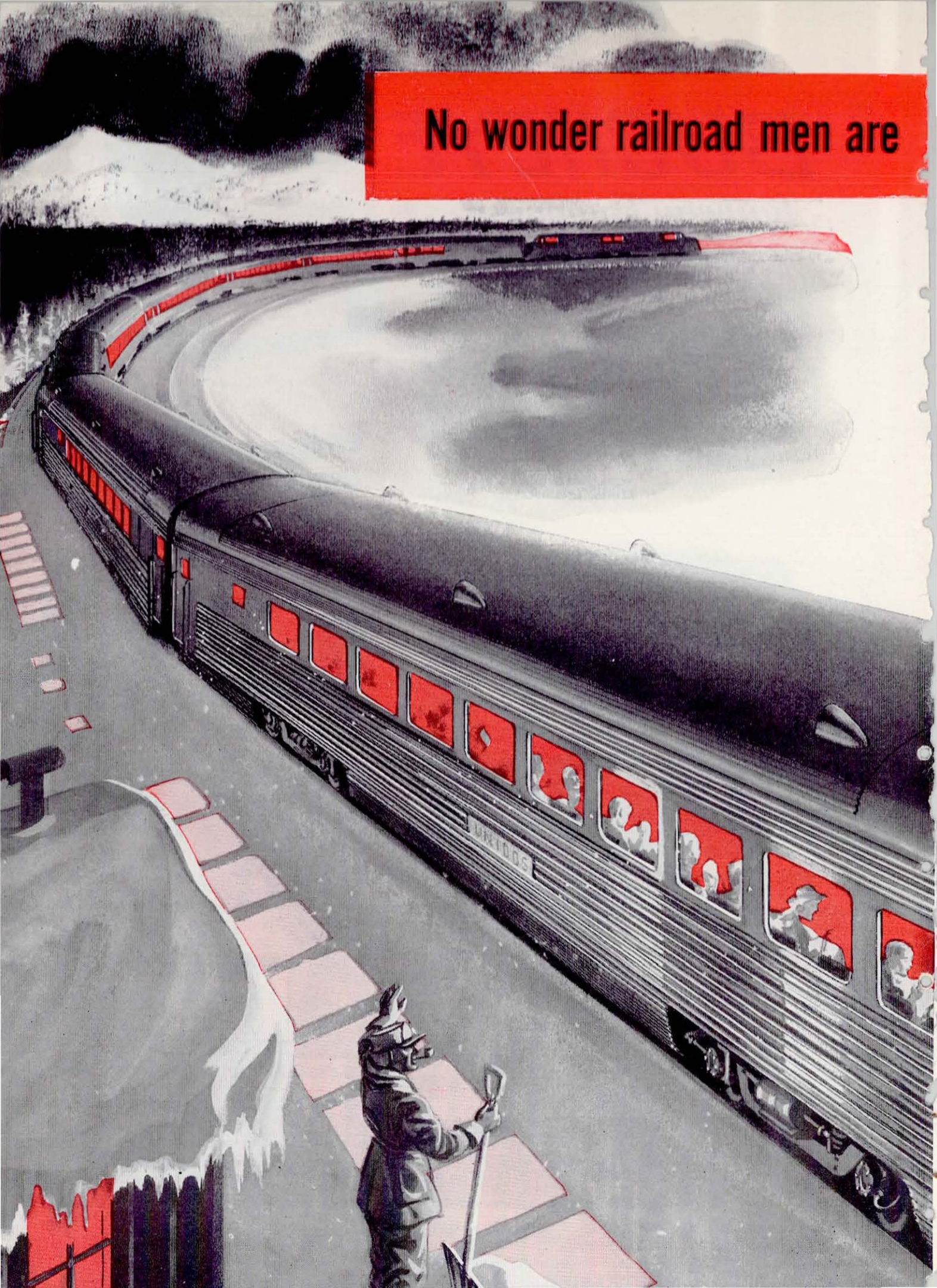
TYPE "H" TIGHTLOCK
COUPLER



TIGHTLOCK COUPLER YOKE

**THE BUCKEYE STEEL CASTINGS COMPANY**

New York, N. Y. Columbus, Ohio Chicago, Ill.


No wonder railroad men are

# WEATHER VAIN!

**INSUTAPE and WOVENSTONE steam pipe insulation make it possible for railroad mechanical and operating personnel to *do* something about the weather—inside cars. No matter how long trains may be, Insutape and Wovenstone protect piping from ice and snow, sleet and slush—protect against heat losses as steam courses through pipes the full length of the train. It's always fair weather when Unarco insulation and piping get together! Weather-proof, ballast-proof and fire-proof, Insutape and Wovenstone have provided trouble-free, day-in, day-out service on thousands of cars and locomotives for years. Both can be applied, removed for pipe inspection and reapplied in a jiffy!**

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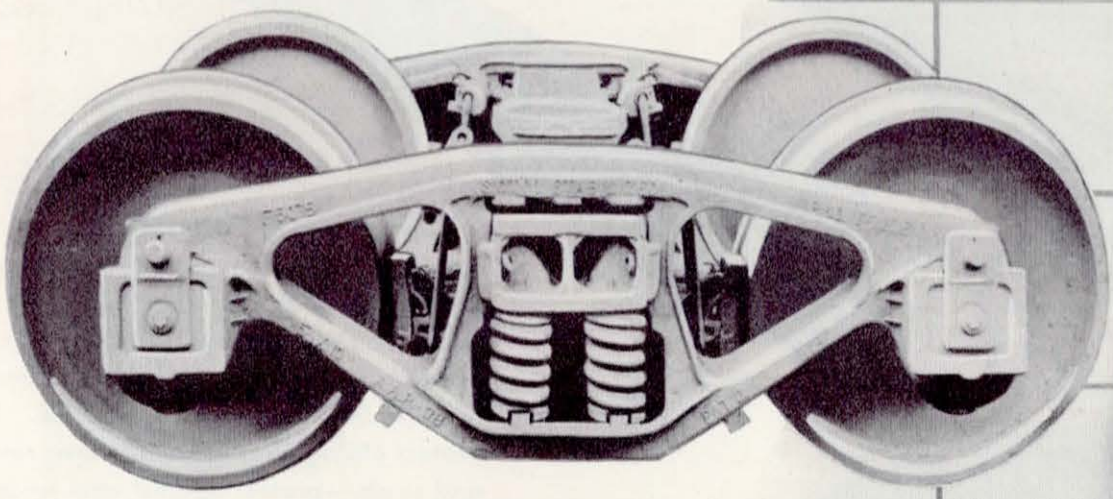
**UNARCO**

**UNION ASBESTOS & RUBBER CO.**
332 S. Michigan Avenue, Chicago 4, Illinois
New York • San Francisco

# why the ORDER TREND STAYS

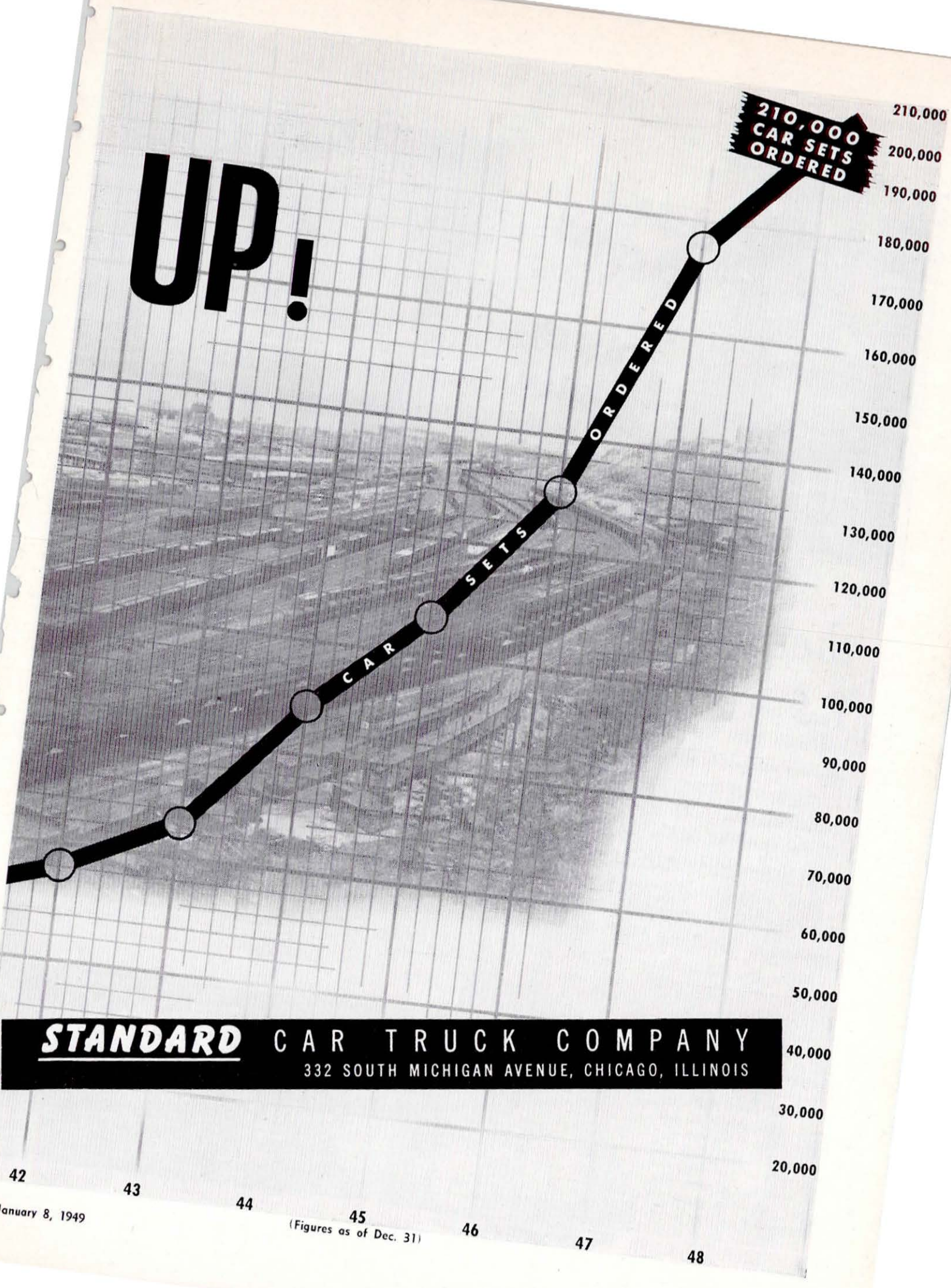


# BARBER

## *VARIABLE FRICTION* STABILIZED TRUCKS

1. ***EASY RIDING***
   All Speeds—All Loads
2. ***LONG LIFE***
   10 to 12 years
3. ***EASY ASSEMBLY***
   As the A. A. R. Truck
4. ***SIMPLICITY***
   A Spring, A Wedge, A Wear Plate—per column
5. ***A. A. R. DIMENSIONS***
   For Interchangeability

1940 41




January 8, 1949

(Figures as of Dec. 31)

# *there must be good reasons why!*

THERE ARE! Pioneering in the business, our engineers have always worked closely with railway officials to develop cups that meet the exacting requirements of railroad drinking water service.

For example: AJAX, the oval cup without side creases, nestles perfectly into a passenger's hand—is held easily and safely, even on swiftly moving trains—*is generally disposed of at the fountain.* The deluxe AERO Cup, with rolled edges and flat bottom, is a sure sign in any part of the train that you have given careful consideration to the comforts of every single one of your passengers.

Add to these reasons the facts that these cups will fit into whatever type of equipment you may now have . . . that we design and manufacture dispensers for every conceivable installation . . . and you have some of the answers to why the AERO-AJAX line continues to be first choice among a great number of America's leading railroads. RC-49

**FREE** — Let us send you this practical sample kit consisting of AJAX or AERO Cups nested on a handsome plastic ash tray — together with our new Railway folder. We also offer you AJAX or AERO Cups and dispensers for test runs, and will co-operate in every way. **Get your AJAX and AERO samples and ash tray today.**

**AERO AJAX**

**PAPER DRINKING CUPS**

**UNITED STATES ENVELOPE COMPANY**

**Paper Cup Division, Worcester 5, Mass.**

**Los Angeles Division : San Francisco Division**

RAIN! SNOW! DIRT!

# LAMSON *weather-tight* BOLTS

## *Seal them out!*

**NO COUNTER-BORING • NO SPLIT BOARD ENDS • MOISTURE PROOF**

The Lamson Weather-tight Bolt is by far the most efficient bolt for wood construction yet developed.

Its patented head and shank construction eliminates the need for counter-boring, seals out moisture, prevents splitting of board ends and keeps the bolt from turning in the hole.

Car floors, walls, platforms and catwalks, as well as skids and outdoor loading platforms last *years* longer when Lamson Weather-tight Bolts are used. It will pay to specify them *every time!*

For full details send for this new booklet.


RAILROAD SALES DEPARTMENT

**THE LAMSON & SESSIONS COMPANY**

1973 West 85th Street • Cleveland 2, Ohio

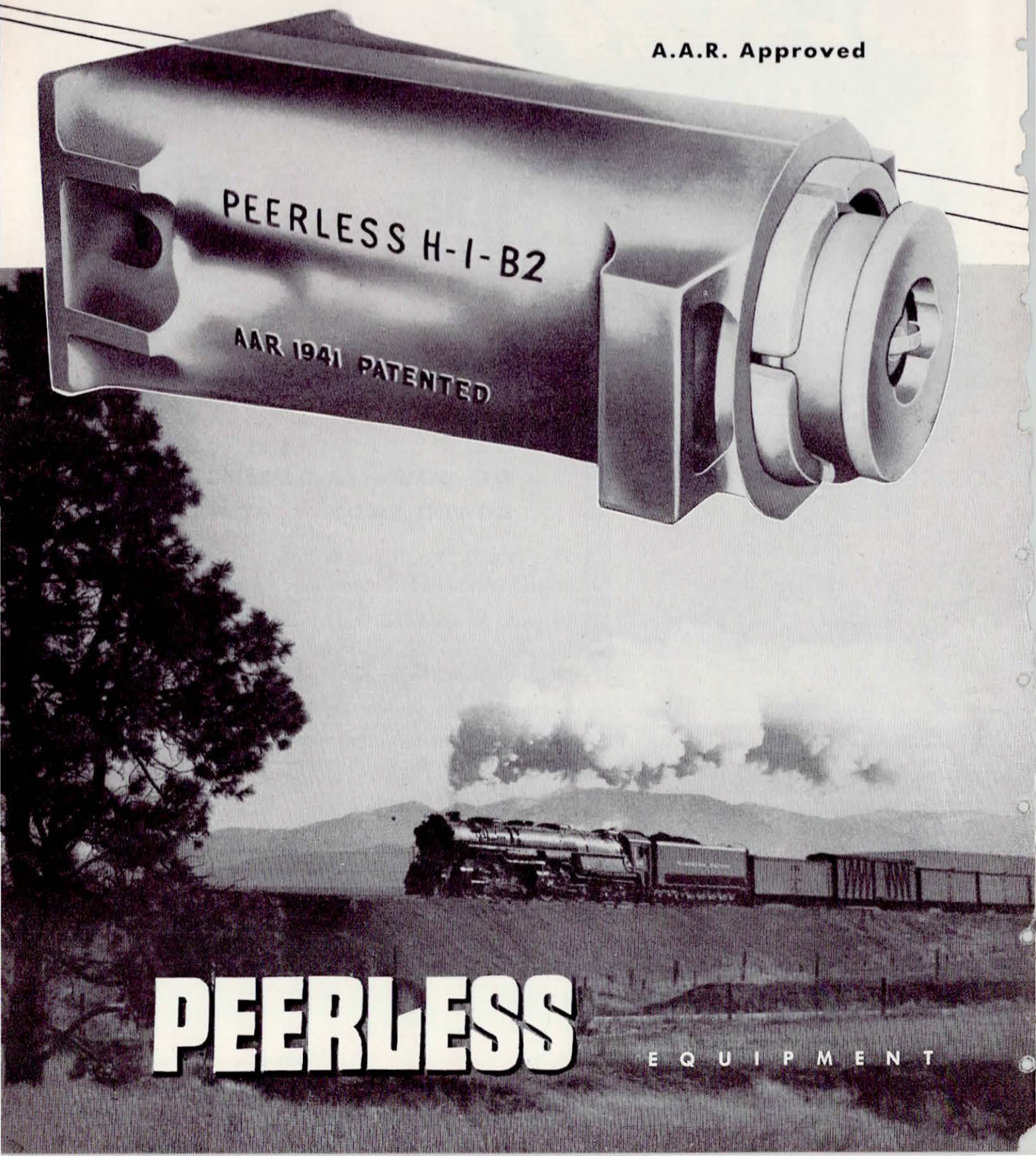
*Plants at Cleveland and Kent, Ohio • Birmingham • Chicago*


# Lamson & Sessions

FASTENERS THAT KEEP PACE WITH RAILROAD PROGRESS

*First line of*

**A.A.R. Approved**




# PEERLESS

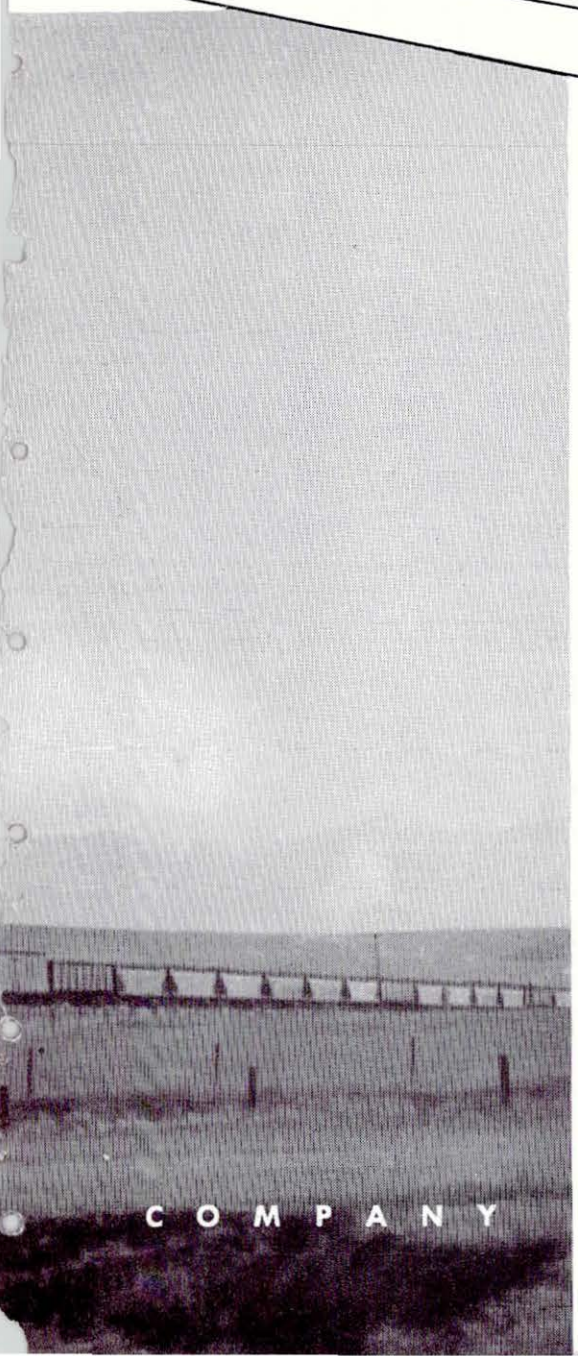
EQUIPMENT

# *defense against* SHOCK

# PEERLESS H-1-B 2

## DRAFT GEAR

Fortify your freight cars
and lading against damage losses
with PEERLESS H-1-B2 Draft Gears.
They assure better operation of
cars under all traffic conditions.




1. SMOOTH ACTION
2. POSITIVE RELEASE
3. LOW RECOIL
4. HIGH ABSORPTION

5. LIGHT WEIGHT – permitting heavier payloads
6. LONG LIFE – because of rugged construction
7. TROUBLE FREE – resulting from sound engineering and careful manufacture

A streamlined light weight draft gear
for heavy duty service.

332 South Michigan Avenue Chicago 4, Illinois

# ANOTHER *Advance* IN RAILROAD OPERATION

IBM
Card-to-Tape
Machine

## NEW SYSTEM *Speeds* SERVICE

IBM Card-to-Tape and Tape-to-Card Machines permit automatic wire transmission of punched card information, speeding the preparation and recording of all car service data, including the following:

**In the Yards**

Interchange Reports
Advance Consists
Wheel Reports
Passing Reports

**In the Car Service Office**

Current Car Movement Records
Monthly Car Movement Records
Per Diem Calculation
Car Counts
Daily Consolidated Passing Reports
Car Tracing and Distribution Information

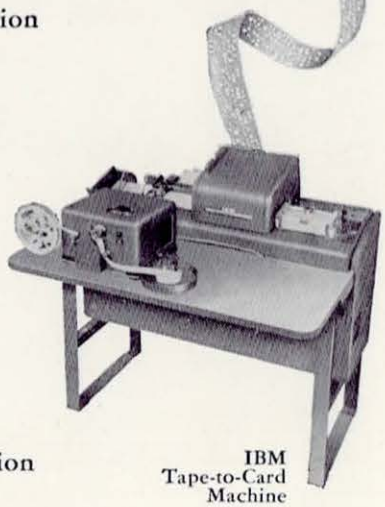
**In the Superintendent's Office**

Complete Train Consists
Passing Reports

**In the Traffic Office**

Shipper and Consignee Analyses

In addition, all types of special reports can be obtained from the same basic records. For complete information about this IBM development, ask to have an IBM representative call at your office.



IBM
Tape-to-Card
Machine

**IBM**

**ELECTRIC PUNCHED CARD ACCOUNTING MACHINES**

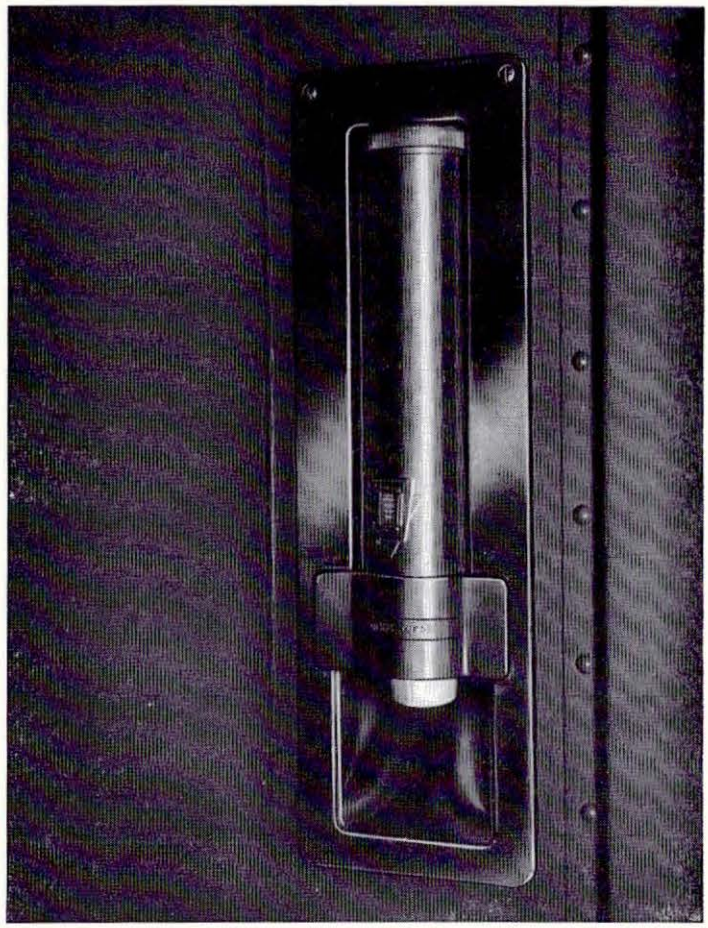
**PROOF MACHINES . . . SERVICE BUREAUS . . . ELECTRIC TYPEWRITERS . . .**
**TIME RECORDERS AND ELECTRIC TIME SYSTEMS**

**International Business Machines Corporation, World Headquarters Building, 590 Madison Avenue, New York 22, N. Y.**

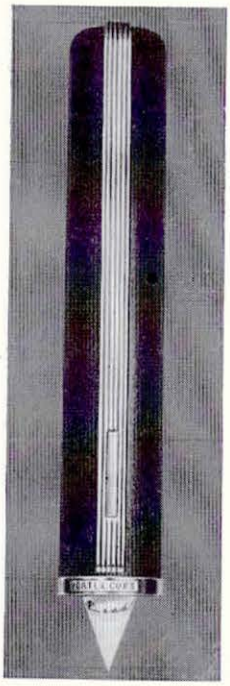
# RIDING THE READING'S NEW "WALL STREET"

# DIXIE CUPS

When the Reading Company looked for the last word in streamlined cup dispensers for its new, streamlined **Wall Street,** the choice was—naturally enough—the handsome Dixie Recessed Cup Dispenser. This dispenser's exclusive feature — interchangeable cup adapters, accommodating either flat-bottom Dixies or cone-shape Vortex Cups in either large or small sizes—makes it the natural selection of any far-sighted railway executive.

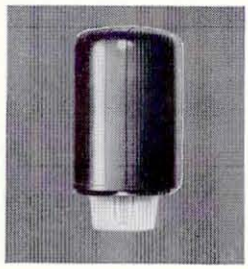


Dixie Recessed Dispenser fits flush with bulkhead. Beautiful satin-chrome finish. Shown with flat-bottom Dixie. Adapts to cone-shaped Vortex Cups.



**STREAMLINER**

Trim, smart, easy to mount anywhere. Clear plastic window shows when it's time to refill. Holds flat-bottom Dixies or cone-shaped Vortex Cups—either large or small sizes.



**SPACE SAVER**

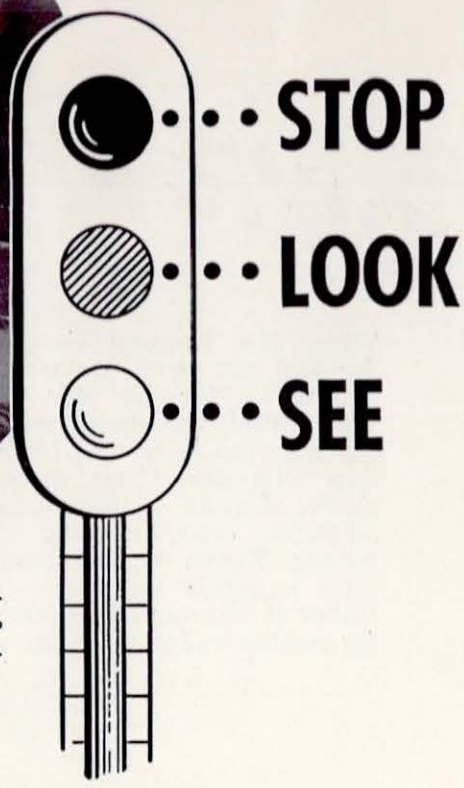
New small dispenser. Takes minimum space in roomettes, compartments.

SPECIAL IMPRINTING OF CUPS WITH YOUR INSIGNIA, SLOGAN, NAME OR OTHER MESSAGE TO YOUR ORDER. Write to Railroad Department, Dixie Cup Company, Easton, Pa.

**STANDARD IN RAILROAD SERVICE FOR OVER 30 YEARS**

DIXIE CUP

"Dixie" and "Vortex" are registered trade marks of the Dixie Cup Company.




Signal glassware, like all optical glassware made Corning, is by subject to constant control and improvement.

# What you get with Corning Signalware!

THE cumulative benefits of Corning research in *all* fields of optics.

THE cumulative benefits of Corning research in *all* fields of illumination.

THE cumulative benefits of Corning research in *all* fields of technical glass production.

This combination of experience and facilities gives you the best signalware available at any time!

*Safety depends on signal glassware—Railroads can depend on Corning.*

CORNING means research in GLASS

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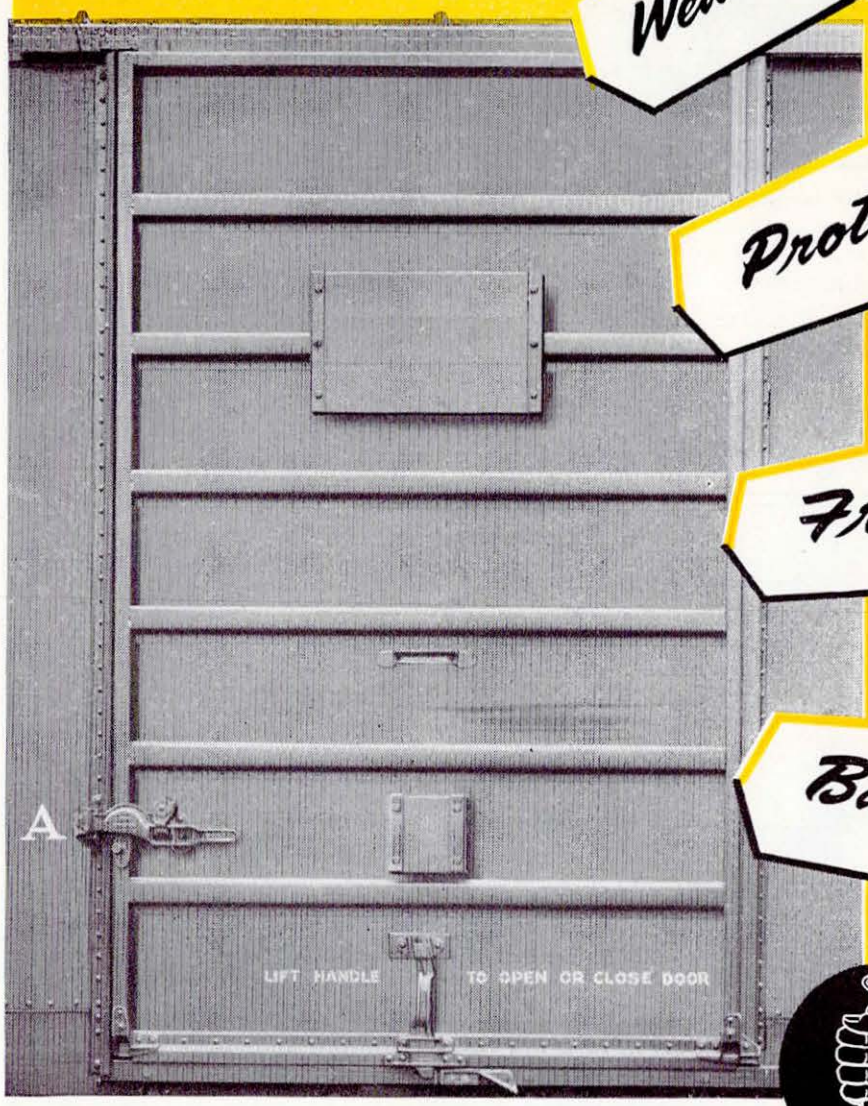
**RAILROAD GLASSWARE**

TECHNICAL PRODUCTS DIVISION: SIGNALWARE • LABORATORY GLASSWARE • GLASS PIPE • GAUGE GLASSES • LIGHTINGWARE • OPTICAL GLASS • GLASS COMPONENTS




Weather Sealed

Protects Lading

Free Rolling

Ball Bearing

Push it with one hand

# SUPERIOR

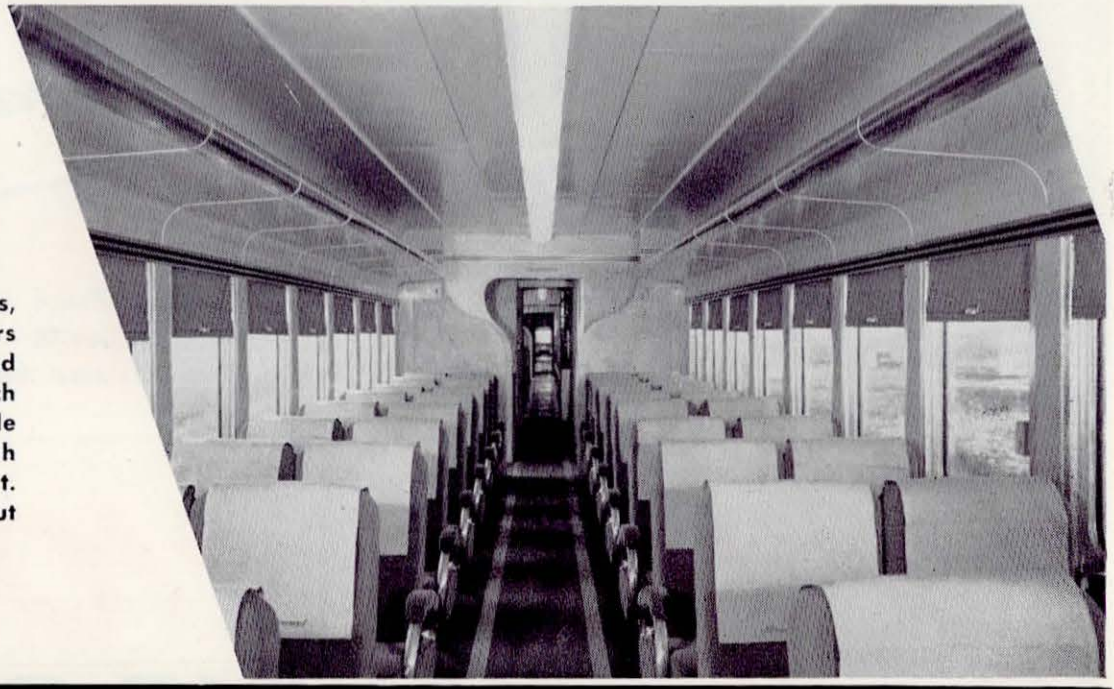
## the lighter, tighter CAR DOOR

**SUPERIOR CAR DOOR CO., McCormick Bldg., CHICAGO**

FOR 62 years the quality cars built for the railroads of America by St. Louis Car Company have exemplified the finest in transportation equipment.

Exterior view (below) of a streamlined Illinois Terminal Train.

Interior views (top and bottom) of the Illinois Terminal Cars.



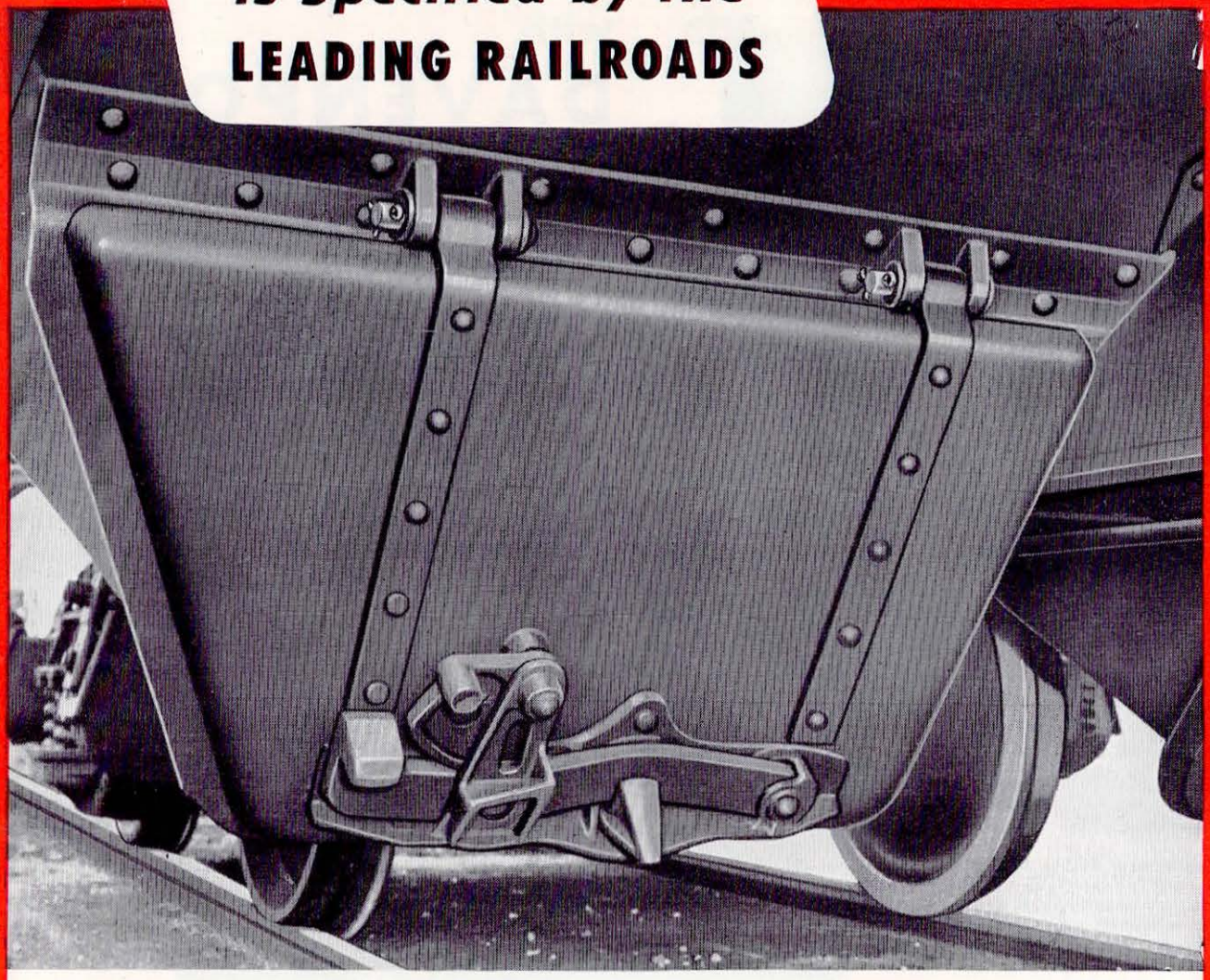
Our modern shops, expert engineers and mechanics, and competent research staff are available to help you with new equipment. Consult us without obligation.

# St. Louis Car Company

St. Louis. Missouri U.S.A.

| Executive Offices & Plant | New York Office | San Francisco Office | Washington Office | Cleveland Office |
|---|---|---|---|---|
| St. Louis | 165 Broadway | Monadnock Bldg. | Tower Bldg. | 606 Williamson Bldg. |

# ENTERPRISE
## *is Specified by the* LEADING RAILROADS



# THE ENTERPRISE UNIT DOOR LATCH

*For Hopper Cars*

### *CHECK THESE ADVANTAGES*

1. Rugged Construction—Will Last Life of Car
2. No Connecting Door Brace Required
3. Saves Weight and Reduces Car Parts
4. Tight Door Closure for Finest Ladings
5. Reduces Loss from Spill and Breakage

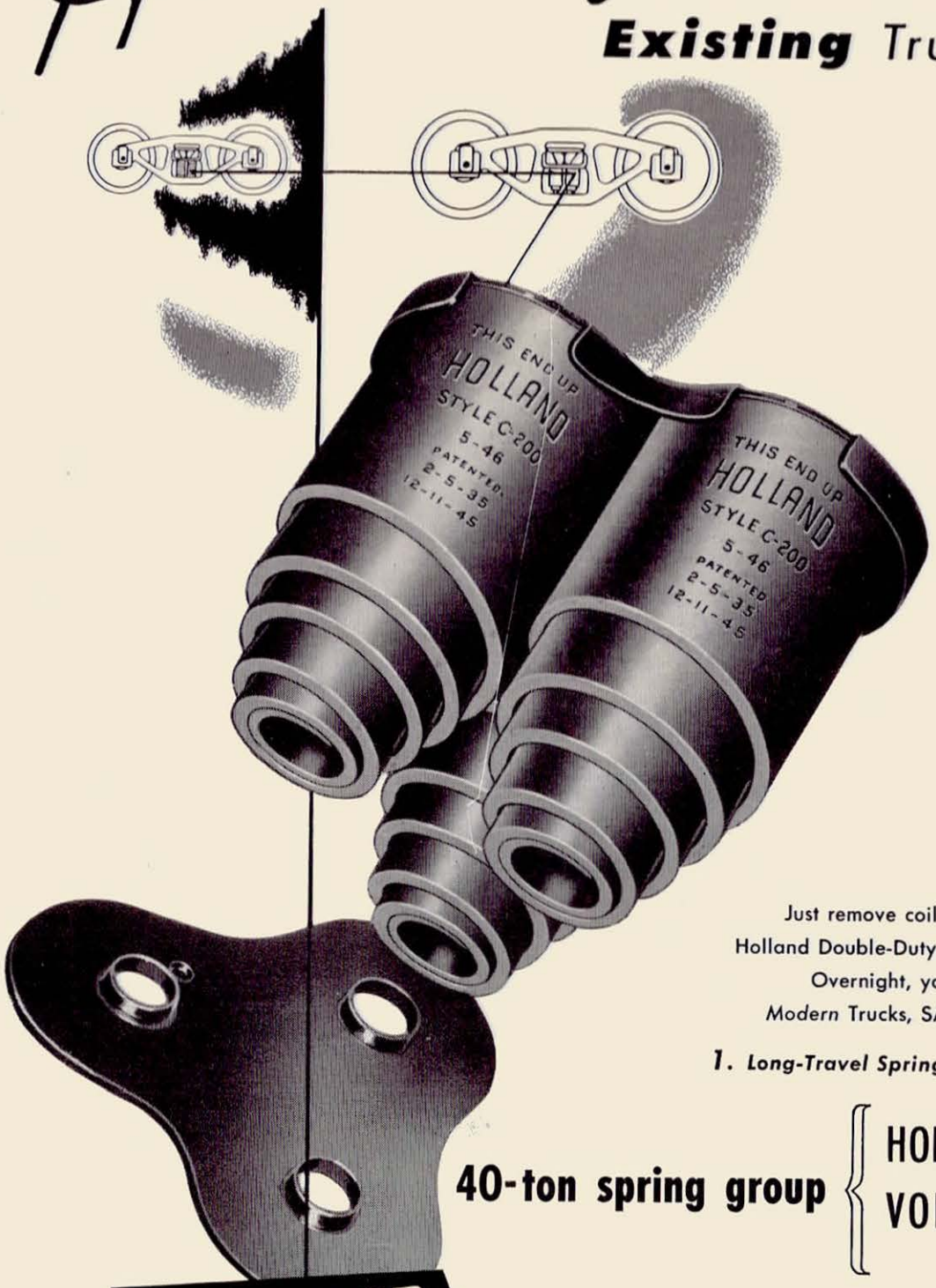
**Unit Door Latches Have Been Specified Recently on Over 35,000 Hopper Cars**

## ENTERPRISE RAILWAY EQUIPMENT COMPANY

59 East Van Buren Street • Chicago 5, Illinois

# "Holland-ize"

## Existing Trucks . . . for high speed service




*It's Easy!*

Just remove coil springs and replace with Holland Double-Duty VOLUTE Friction Springs. Overnight, your present trucks become *Modern* Trucks, SAFE for high-speed trains.

***1. Long-Travel Springs*** ***2. Friction Control***

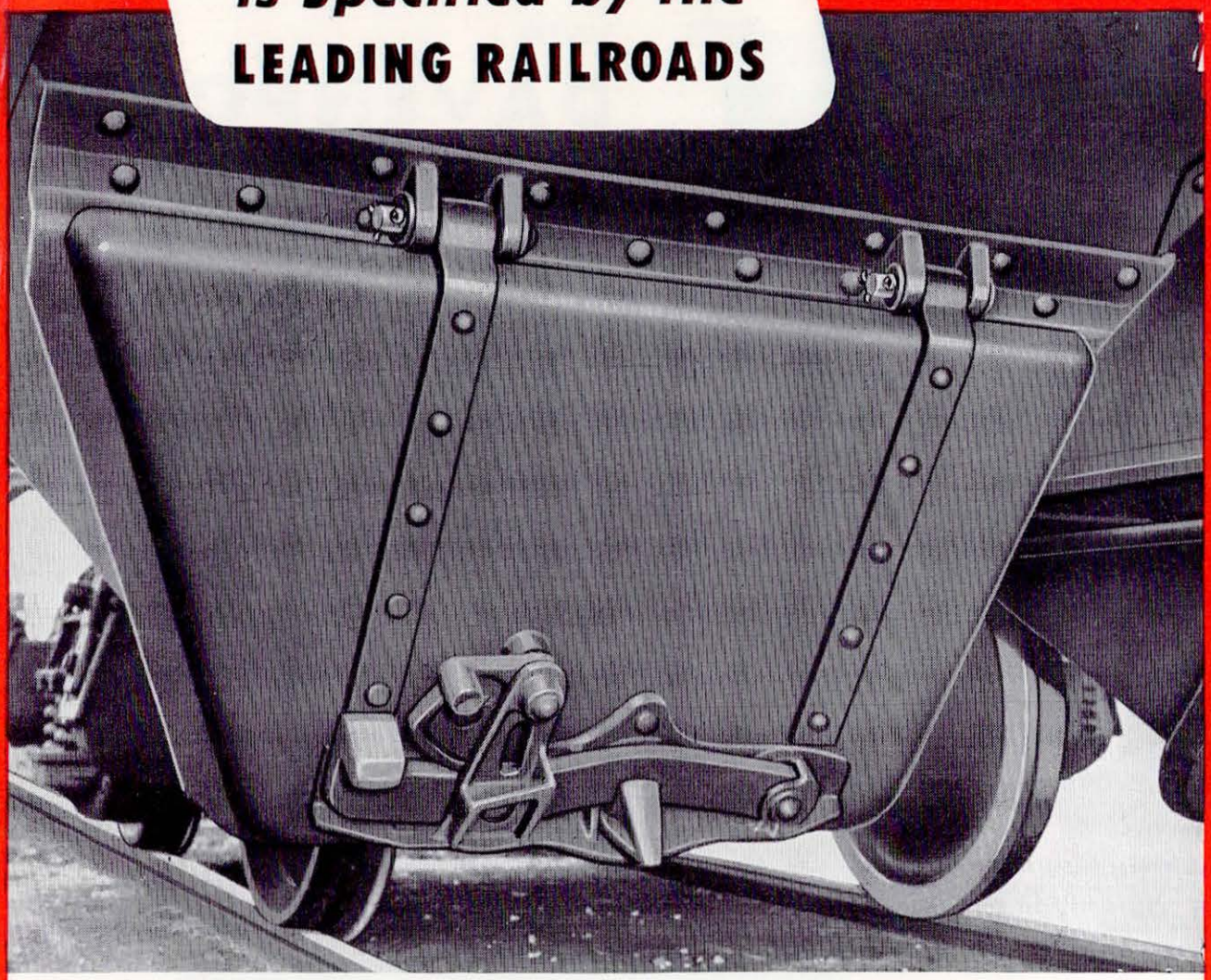
**40-ton spring group** { HOLLAND ride-ease VOLUTE SPRINGS
***STYLE C-200***

**HOLLAND COMPANY**
332 S. MICHIGAN AVE.
CHICAGO 4, ILLINOIS

- *Softness of the 2¾" Travel Holland Volute is equal to the 3 1/16" Travel Helical Spring.*
- *Each Spring a Soft, Long-Travel, Vertically and Laterally Stable, Self-Controlled, Load-Carrying Spring.*

2633

# ENTERPRISE
## *is Specified by the* LEADING RAILROADS



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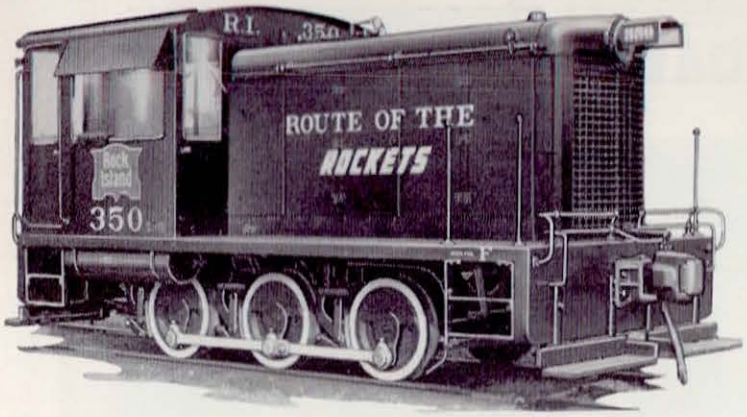
## ENTERPRISE RAILWAY EQUIPMENT COMPANY

59 East Van Buren Street • Chicago 5, Illinois

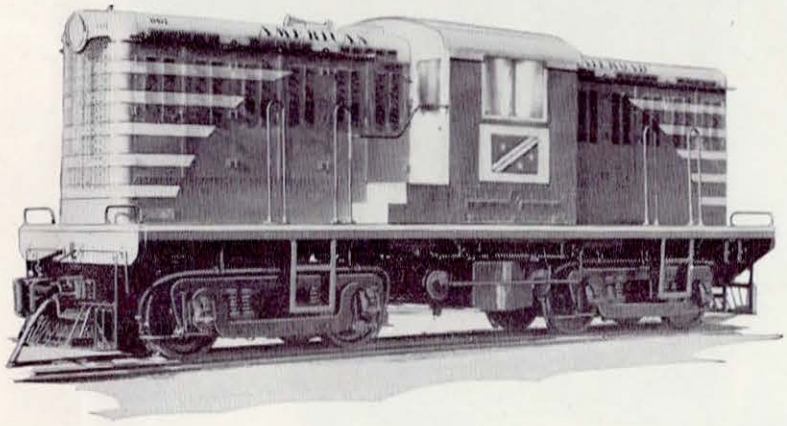
# Put PROFIT-POWER on your RAILS

with

# DAVENPORT Better-Built LOCOMOTIVES




*Many locations could be made more profitable through the installation of Davenport 30-Ton Diesel Mechanical Switchers of this type.*



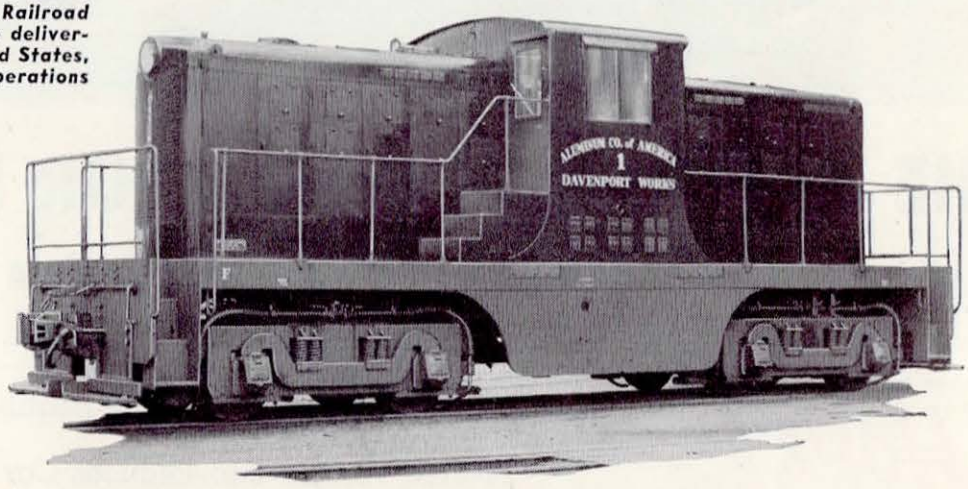
*One of ten Davenport 44-Ton Diesel Electric Power Units built for the American Railroad of Porto Rico. Its counterparts are delivering profits on railroads in the United States, in Brazil — and for industrial operations around the world.*

Many steam switchers and heavy Diesels are in use where the traffic load could be handled BETTER and with SUBSTANTIAL SAVINGS by smaller and more efficient power units. The over all drag on railroad economy through such WASTE of OVER-POWER is considerable and profit-minded executives will find RIGHT NOW a good time to apply a remedy.

The positive CURE of WASTE through OVER-POWER is the adoption of the PROFIT-POWER inherent in Davenport Lighter Diesel Switchers. The proof is in the economy record of scores of operations. May we explore, with you, the savings possibilities latent on your road?

DAVENPORT Sold all over The World LOCOMOTIVES

**DAVENPORT Better-Built LOCOMOTIVES are Available in STEAM GASOLINE DIESEL with ELECTRIC or MECHANICAL DRIVE**




*This Davenport Diesel Electric 80-Ton Power Unit, is ideal for large scale industrial switching — and for railroad terminal switching and branch line service.*

***Write for Complete Information***

## DAVENPORT LOCOMOTIVE WORKS

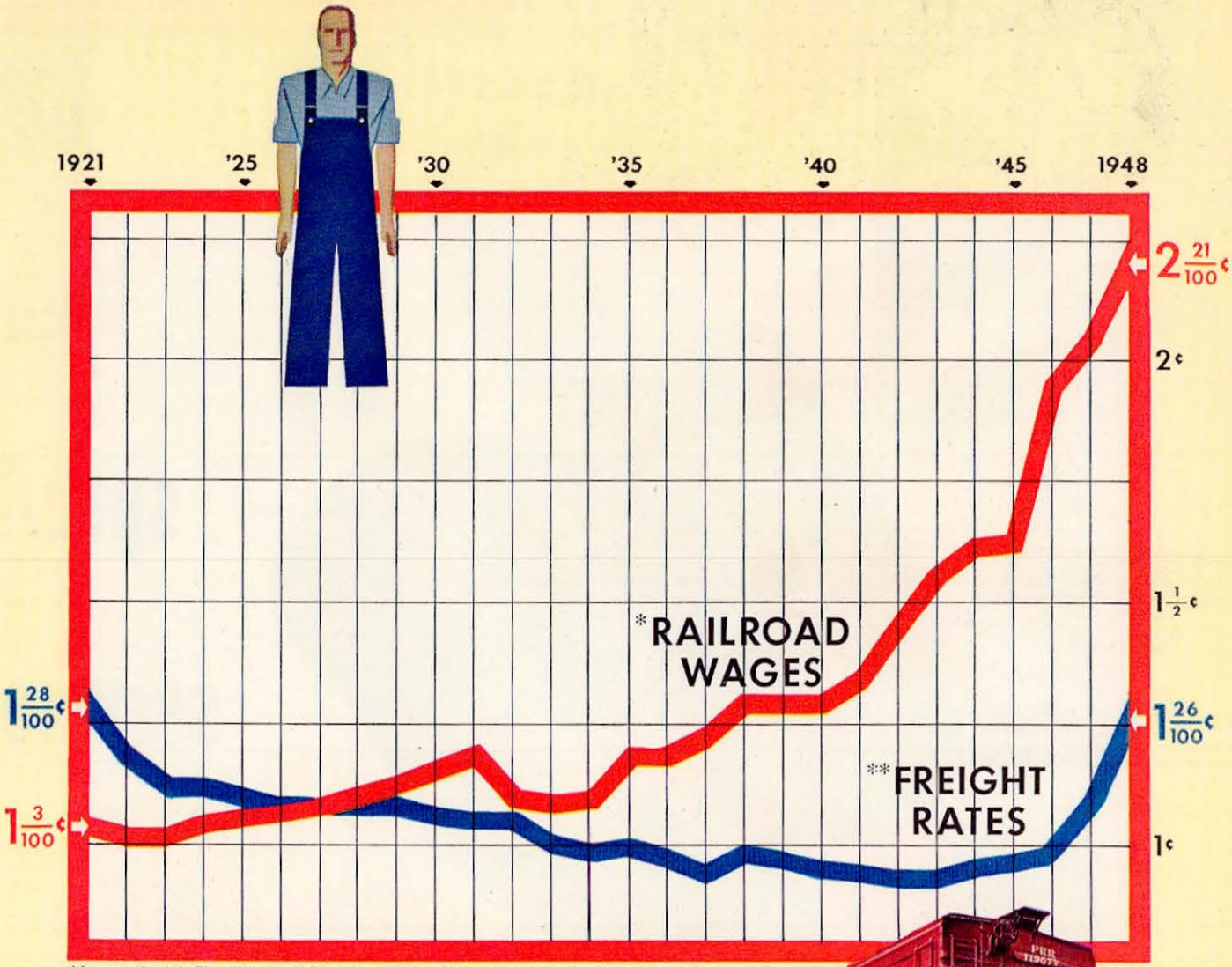
A DIVISION OF DAVENPORT BESLER CORPORATION

**DAVENPORT, IOWA, U. S. A.**

*Pioneers of the Lighter Diesel Switchers*

**Export office • Brown & Sites Co., Incorporated, 50 Church St., New York 7 • Cable Address "Brosites"**

# Wages Double, Average Freight Rates Lower than After World War I




*Average Straight Time Wages Paid for One Minute of Work, Class I Railroads; 1948 figure is for July, the latest available. **Revenue for Hauling the Average Ton of Freight One Mile, Class I Railroads; 1948 figure is for September, the latest available.

**The average hourly earnings of America's railroad employes today are *more than double* what they were in 1921, after the first World War. But the railroads *now receive less* for hauling the average ton of freight one mile than they received then.**

Great economies have been achieved over the last twenty-five years by technological improvements in both equipment and tracks. Some of the increased cost of wages, materials and supplies has been offset in that way.

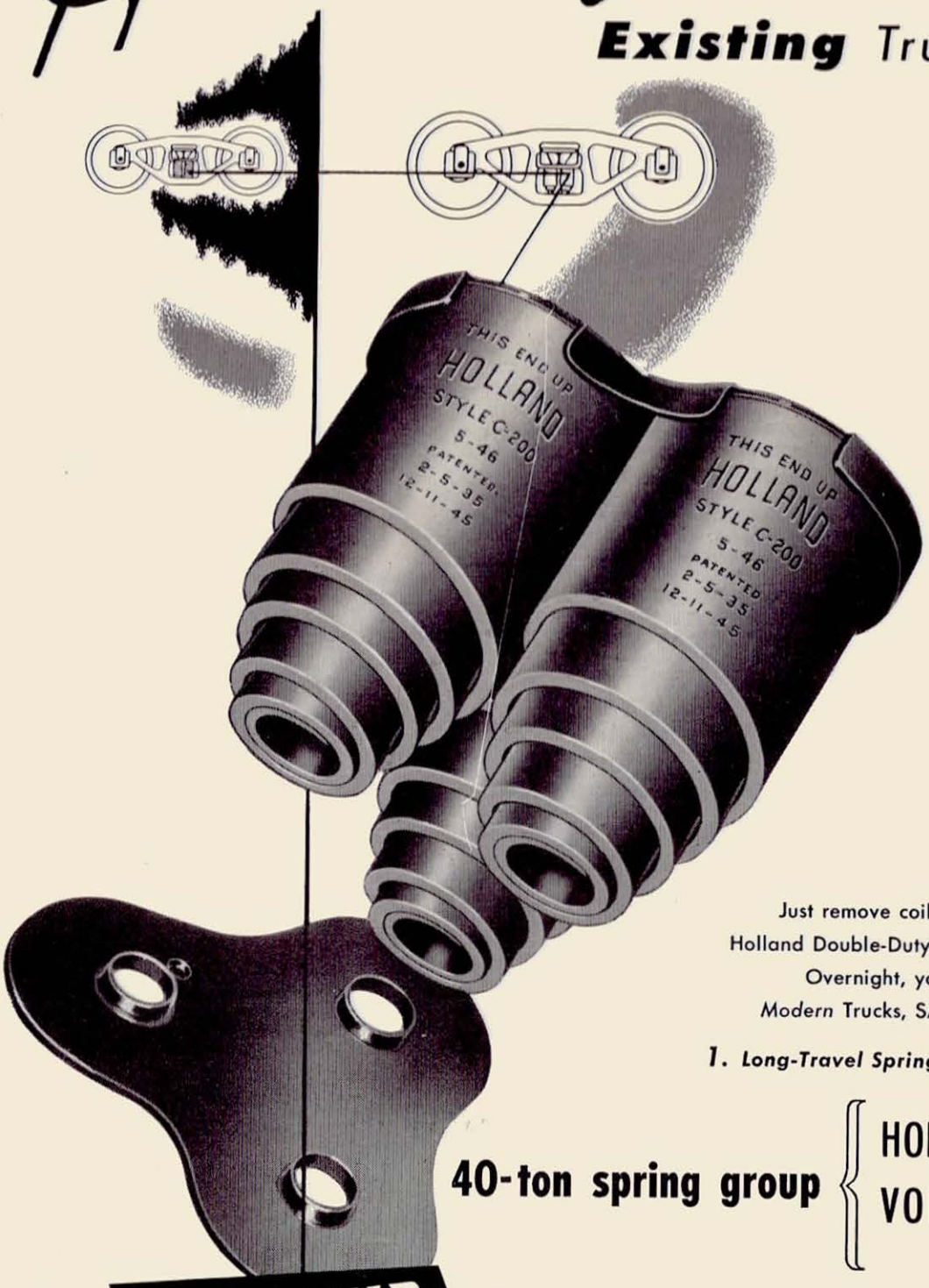
But it takes large sums of money to make these improvements, more of which are urgently needed. Additional wage increases are now taking place and, since 1939, the cost of materials and supplies has doubled and continues to rise. Present freight rates—despite post-war increases—are insufficient to pay these expenses of operation and to provide funds for the changes required to reduce costs and improve service.

That's why the railroads are asking for increased freight rates.

## PENNSYLVANIA RAILROAD

# "Holland-ize"

## **Existing** Trucks . . . for high speed service




*It's Easy!*

Just remove coil springs and replace with Holland Double-Duty VOLUTE Friction Springs. Overnight, your present trucks become *Modern* Trucks, SAFE for high-speed trains.

***1. Long-Travel Springs*** ***2. Friction Control***

**40-ton spring group** { HOLLAND ride-ease VOLUTE SPRINGS *STYLE C-200*

- *Softness of the 2¾" Travel Holland Volute is equal to the 3 1/16" Travel Helical Spring.*
- *Each Spring a Soft, Long-Travel, Vertically and Laterally Stable, Self-Controlled, Load-Carrying Spring.*

**HOLLAND COMPANY**
332 S. MICHIGAN AVE.
CHICAGO 4, ILLINOIS

2633

# ALASKA
## THE BULWARK OF DEMOCRACY

THE ALASKA RAILROAD

The IMPROVED FAIR ANCHOR is in use on The Alaska Railroad where it successfully meets the most severe weather conditions, because of its universally known Dependability and Effectiveness.

THE P.&M.CO.

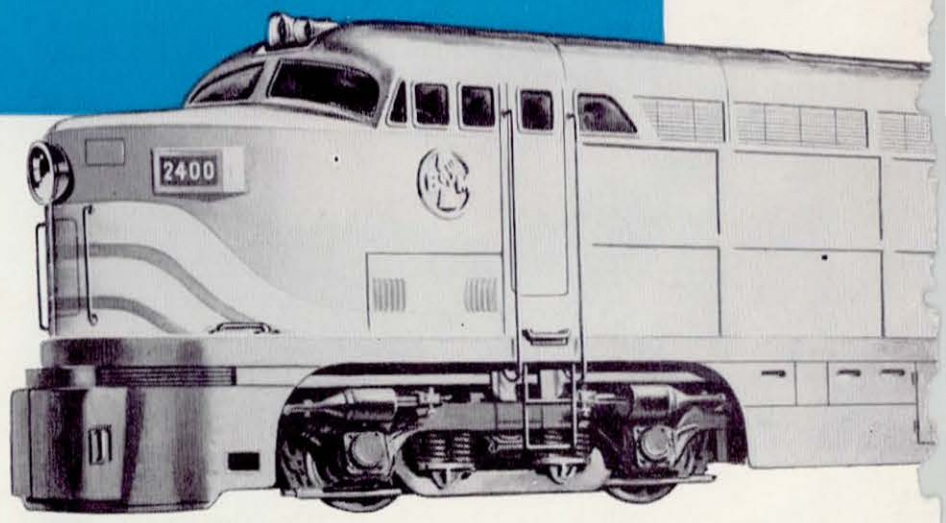
CHICAGO • NEW YORK • DENVER • WASHINGTON • ST. LOUIS • CLEVELAND • ST. PAUL • BOSTON • SAN FRANCISCO

MEXICO D. F.

# FAIRBANKS-MORSE

*presents*

## The "CONSOLIDATION" Line of DIESEL ROAD LOCOMOTIVES




**"C" LINE 4800 H. P.**

The railroad world's most compact power plant! 4800 H.P. in 113 feet—only two units—only two diesel engines.

## A Major Achievement in Diesel Electric Locomotive Design!

The company that introduced the Opposed-Piston Diesel Engine to the railroad world now presents a complete new line of road locomotives . . . a line that reveals new concepts of basic diesel locomotive design and vast opportunities to benefit therefrom.

"Consolidation" locomotives combine more than ever before those features desired by railroad men. Powered by any one of three Opposed-Piston Engines, the "C" Line offers one basic unit that can be powered by either a 1600, 2000 or 2400 H.P. Opposed-Piston diesel. These units can be combined to make locomotives of H.P. ratings from 3200 to 9600 H.P. in increments of 400 H.P. Each can be equipped with any one of 9 gear ratios to give a total of 180 different locomotives *from only one basic unit!* You get the locomotive best suited to *your* railroad from the "C" Line!

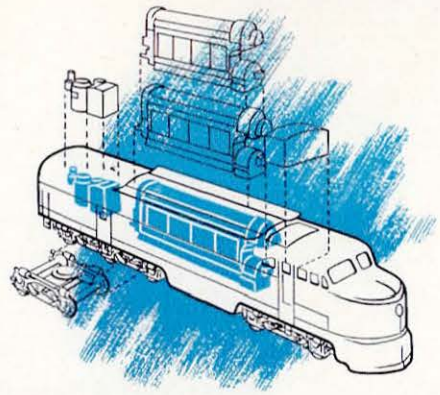
**When it comes to locomotives...**

**FAIRBANKS-MORSE**

***A name worth remembering***

DIESEL LOCOMOTIVES • DIESEL ENGINES
STOKERS • SCALES • MOTORS • GENERATORS
PUMPS • RAILROAD MOTOR CARS and
STANDPIPES • FARM EQUIPMENT • MAGNETOS

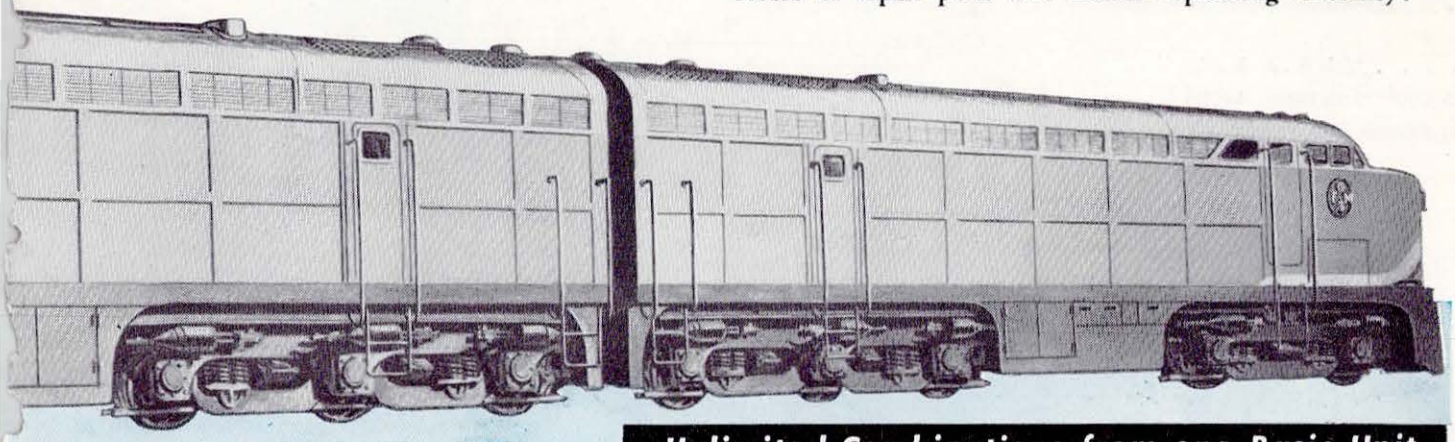
# Unlimited Advantages in Maintenance, Operation and Selection



## The "C" Line Introduces UNITIZED DESIGN

For the first time, in the "C" Line locomotive, sub-assembly construction has been generously employed. Simple, standard "packaged" units—dynamic braking, compressor, engine, oil filter, cooler, boiler, water tanks—are assembled on the production floor and installed in the body by connecting pre-set wires, piping, fuel and water lines, etc. All units are interchangeable with similar units.

Think what this can do to reduce maintenance, simplify stocks of repair parts and increase operating efficiency!



### Ten Point Superiority . . .

1. *Less Total Weight*
2. *More Weight on Drivers*
3. *Uniform Wheel Loading*
4. *Horsepower to Suit the Job*
5. *Shorter Overall Length*
6. *Excellent Continuous Tractive Effort*
7. *Good Tracking and Riding Qualities*
8. *Dynamic Braking on Any Model*
9. *Maximum Interchangeability of Parts*
10. *Maximum Accessibility*

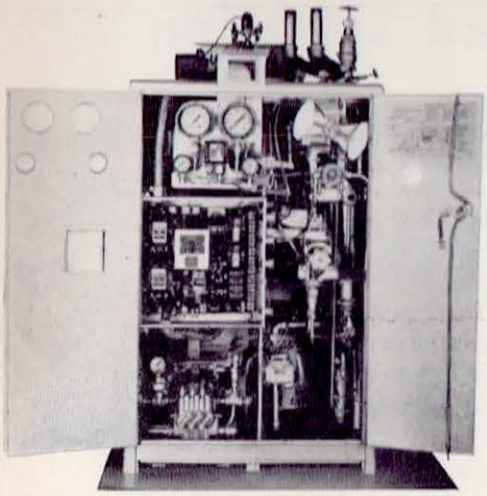
**To Railroad Executives . . .**

**Fairbanks, Morse & Co. invites your questions in regard to the application of "C" Line locomotives to your railroad. Complete details are available on request.**

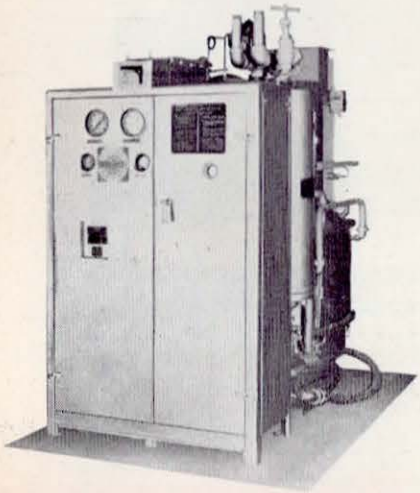
### Unlimited Combinations from one Basic Unit

| HORSE-POWER | TYPE | LENGTH: 56'-3 (P. F.) HEIGHT: 15'-0 MAX | TOTAL WEIGHT (TONS) | WEIGHT ON DRIVERS (TONS) | WEIGHT PER IN. OF WHEEL | CONTINUOUS T. E. IN THOUSANDS LBS 65 M.P.H. | 100 M.P.H. | WATER CAP. GAL. | FUEL CAP. GAL. | DYN. BRAKE |
|---|---|---|---|---|---|---|---|---|---|---|
| 1600 | A | | 120 | 120 | 714 lbs. | 42.8 @ 11.2 mhp | 26.4 @ 18.7 mph | 0 | 1200 | Yes |
| | B | | 120 | 120 | 714 lbs. | 42.8 @ 11.2 mph | 26.4 @ 18.7 mph | 0 | 1200 | Yes |
| 2000 | A | | 123 | 123 | 732 lbs. | 42.8 @ 14.7 mph | 26.4 @ 23.5 mph | 0 | 1200 | Yes |
| | B | | 123 | 123 | 732 lbs. | 42.8 @ 14.7 mph | 26.4 @ 23.5 mph | 0 | 1200 | Yes |
| 2400 | A | | 126 | 126 | 750 lbs. | 42.8 @ 17.7 mph | 26.4 @ 28.2 mph | 0 | 1200 | Yes |
| | B | | 126 | 126 | 750 lbs. | 42.8 @ 17.7 mph | 26.4 @ 28.2 mph | 0 | 1200 | Yes |
| 1600 | A | | 125 | 125 | 744 lbs. | 42.8 @ 11.2 mph | 26.4 @ 18.7 mph | 1000 | 1200 | Yes |
| | B | | 125 | 125 | 744 lbs. | 42.8 @ 11.2 mph | 26.4 @ 18.7 mph | 1000 | 1200 | Yes |
| 1600 | A | | 134 | 110 | 655 lbs. | 42.8 @ 11.2 mph | 26.4 @ 18.7 mph | 1400 3000 #/hr Boiler | 1200 | Yes |
| | B | | 134 | 110 | 655 lbs. | 42.8 @ 11.2 mph | 26.4 @ 18.7 mph | 1400 3000 #/hr Boiler | 1200 | Yes |
| 2000 | A | | 139 | 114 | 678 lbs. | 42.8 @ 14.7 mph | 26.4 @ 23.5 mph | 1400 3000 #/hr Boiler | 1200 | Yes |
| | B | | 139 | 114 | 678 lbs. | 42.8 @ 14.7 mph | 26.4 @ 23.5 mph | 1400 3000 #/hr Boiler | 1200 | Yes |
| 2400 | A | | 142 | 116 | 690 lbs. | 42.8 @ 17.7 mph | 26.4 @ 28.2 mph | 1400 3000 #/hr Boiler | 1200 | Yes |
| | B | | 142 | 116 | 690 lbs. | 42.8 @ 17.7 mph | 26.4 @ 28.2 mph | 1400 3000 #/hr Boiler | 1200 | Yes |

THE SAME SIMPLICITY OF CONTROLS DEVELOPED FOR O.K. STEAM GENERATORS



. . . . . AND A NEW COMBUSTION CHAMBER WITH INTENSI-FIRED COMBUSTION



1. New 2500 lb. rating (3000 lb. Top Capacity) steam generator is about the same size and weight as 1600 lb. generator but almost twice the capacity. New 4000 lb. rating (4800 lb. top capacity) will occupy same space as present 3000 lb. rating steam generator.
2. Many railroads propose using dual 2500 lb. rating generator to provide flexibility and top reserve capacity.
3. 99% dry steam for highest efficiency.
4. Maximum efficiency of heat transfer — new low in stack temperatures.
5. Full steam pressure from cold start in 2 minutes.
6. Can be put in corner of locomotive — on either wall.
7. All servicing is from front of unit.

*At a meeting of mechanical and operating men held recently at the Vapor plant detailed discussion and a demonstration of all phases of Intensi-Fired Steam Generator operation was conducted. These talks have been included in an illustrated booklet, giving complete details about this new development. Write for Bulletin No. 509.*

A RESERVE OF STEAM SUPPLIES FULL NEEDS OF LONGEST TRAINS IN MOST SEVERE WEATHER

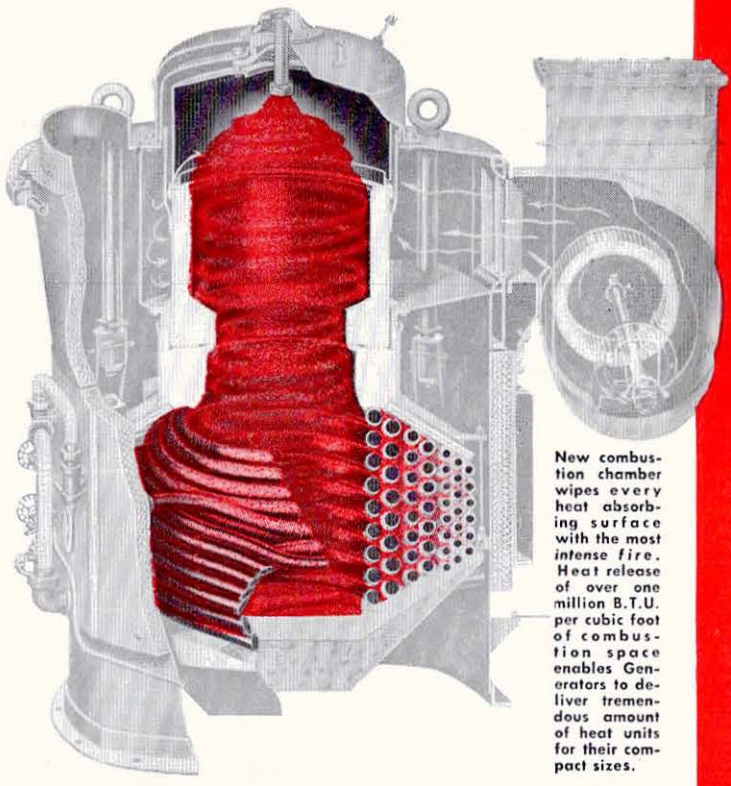
# VAPOR HEATING

# THE MOST EFFICIENT STEAM GENERATOR EVER DEVELOPED FOR USE IN DIESEL LOCOMOTIVES

VAPOR "OK" CONTROLS

INTENSI-FIRED!

VAPOR INTENSI-FIRED COMBUSTION



New combustion chamber wipes every heat absorbing surface with the most *intense fire*. Heat release of over one million B.T.U. per cubic foot of combustion space enables Generators to deliver tremendous amount of heat units for their compact sizes.

The development of the new Vapor OK 4625 Intensi-Fired Steam Generator has advantages for departments thruout your Road. To the *mechanical department* it brings the most efficient means of providing steam heat ever developed. To the *maintenance department* it brings simplified controls with less servicing and easier access for maintenance. *Passenger traffic departments* welcome the new Vapor OK 4625 Intensi-Fired Steam Generator — length of trains are no longer limited by boilers whose capacities cannot provide ample steam in ordinary operation or under emergency conditions. *Executive departments* recognize the public relations value of assuring passengers ample heat under all operating conditions.

**CORPORATION**

80 EAST JACKSON BOULEVARD • CHICAGO 4, ILLINOIS

New York • St. Paul • Cleveland • St. Louis • Denver • Washington
Philadelphia • San Francisco • Jacksonville, Fla. • Winnipeg • Montreal

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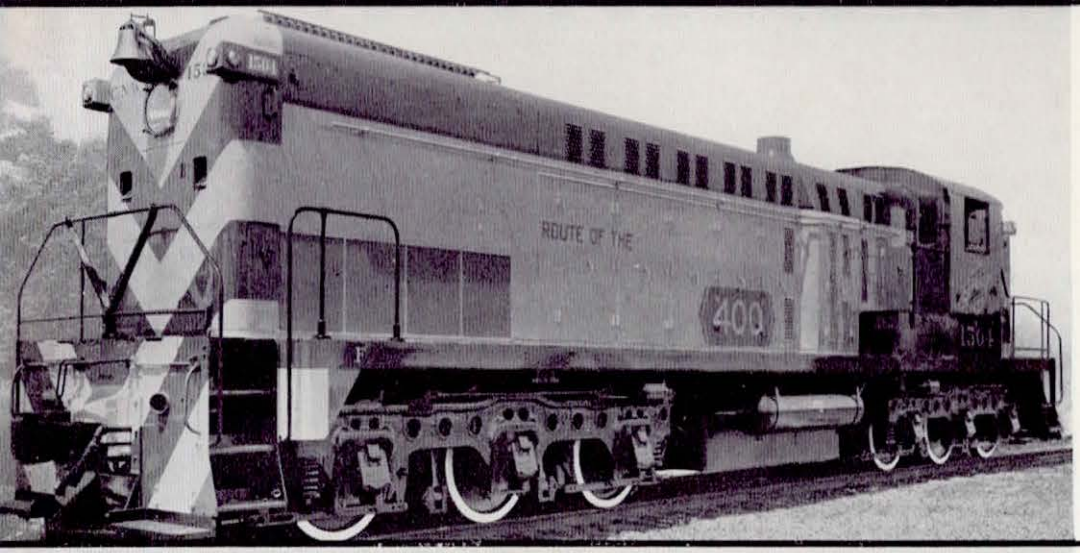
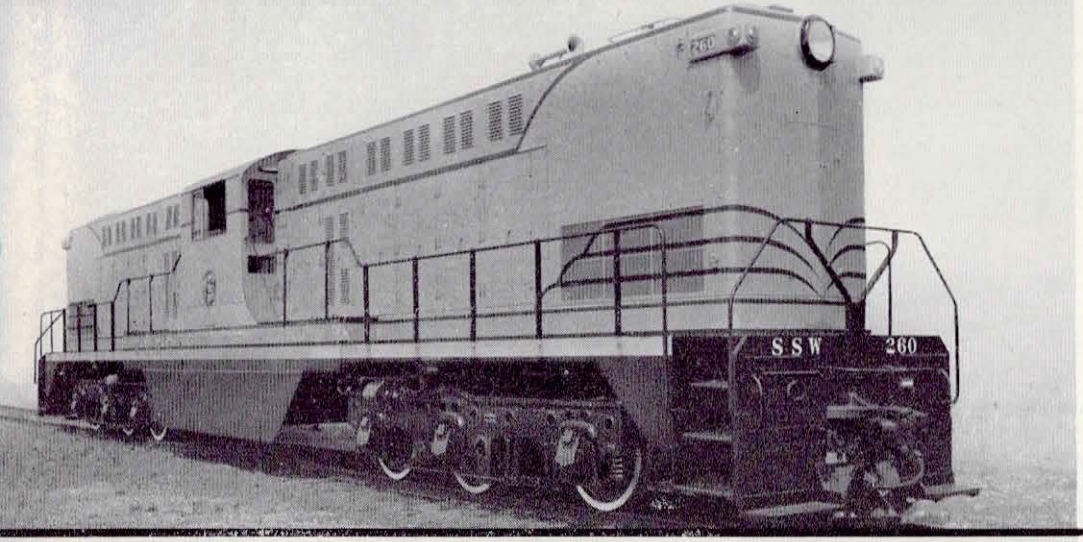
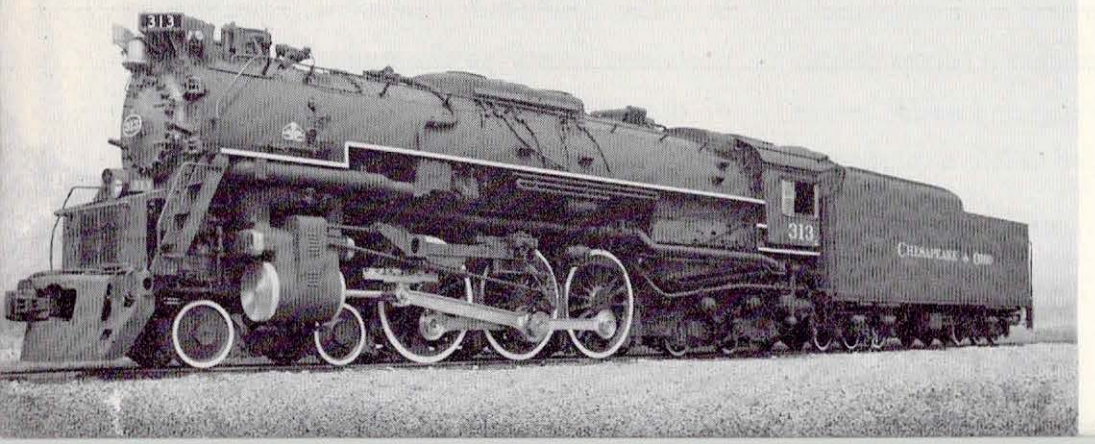
Steam turbine-electric locomotive for the Chesapeake & Ohio Railway.




1500 h.p. diesel-electric Road Switching locomotive for the Chicago & North Western Railway.




2000 h.p. diesel-electric Transfer locomotive for the St. Louis Southwestern Railway.




4-6-4 type reciprocating steam passenger locomotive for the Chesapeake & Ohio Railway.

# *outstanding Baldwin locomotives of 1948*

On these pages are shown a few examples of diesel-electric, steam turbine-electric, and reciprocating steam locomotives, representing a cross-section of 1948 production.

For 1949, and the years that follow, let Baldwin engineers recommend the type of power best suited for your operating requirements. They have been meeting such problems for more than a century.

**6000 h.p. diesel-electric passenger locomotive for the Pennsylvania Railroad.**

**BALDWIN**

The Baldwin Locomotive Works, Philadelphia 42, Pa., U. S. A. Offices: Boston, Chicago, Cleveland, Houston, New York, Philadelphia, Pittsburgh, San Francisco, Seattle, St. Louis, Washington. In Canada: Canadian Locomotive Co., Ltd., Kingston, Ontario.

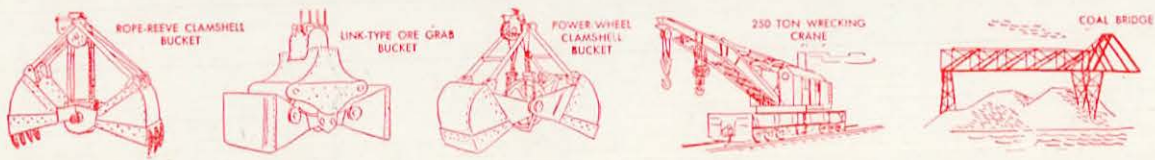
# BROWNHOIST DIESEL ELECTRIC LOCOMOTIVE CRANES...30 • 35-40 • 40-50 TON CAPACITIES

PATENT APPLIED FOR

## LOOK AT ALL THESE FEATURES!

ROLLER BEARING BOOM-TIP SHEAVES
PATENTED 360° MONITOR TOP CAB
SUMMER AND WINTER FAN GIVES ALL WEATHER COMFORT
HOIST DRUMS ROLLER BEARING MOUNTED
SAFE WORM DRIVEN BOOM HOIST
DIESEL ELECTRIC
DOUBLE DISC SMOOTH OPERATING ROLLER BEARING MOUNTED ROTATING CLUTCHES. ELECTRIC SWING AVAILABLE
14" SAFETY CLEARANCE
CAST STEEL SIDE FRAME TRUCKS
INSIDE HUNG SPRING SUSPENDED ELECTRIC MOTORS ON TRUCKS ELIMINATE TRAVEL CLUTCHES AND GEARING

## BROWNHOIST BUILDS BETTER CRANES




**INDUSTRIAL BROWNHOIST CORPORATION • BAY CITY, MICHIGAN**

DISTRICT OFFICES NEW YORK, PHILADELPHIA, CLEVELAND, CHICAGO • AGENCIES: DETROIT, BIRMINGHAM, HOUSTON, DENVER, LOS ANGELES, SAN FRANCISCO, SEATTLE, VANCOUVER, B C., WINNIPEG, CANADIAN BROWNHOIST LTD., MONTREAL, QUEBEC

# At Your Service

OUR engineering and production specialists and our staff of trained service men are always available to our customers for advice and assistance. Let us help solve your problems concerning new equipment and the modernization of your present locomotives and cars.

## For More than Forty Years • • •

COMMONWEALTH CAST STEEL PRODUCTS for all types of locomotives, also for passenger cars and freight cars, have had an outstanding reputation for sound engineering and high quality. They have contributed much toward increased life of railroad equipment, lower maintenance costs, and greater safety of train operation.

Specify COMMONWEALTH PRODUCTS.

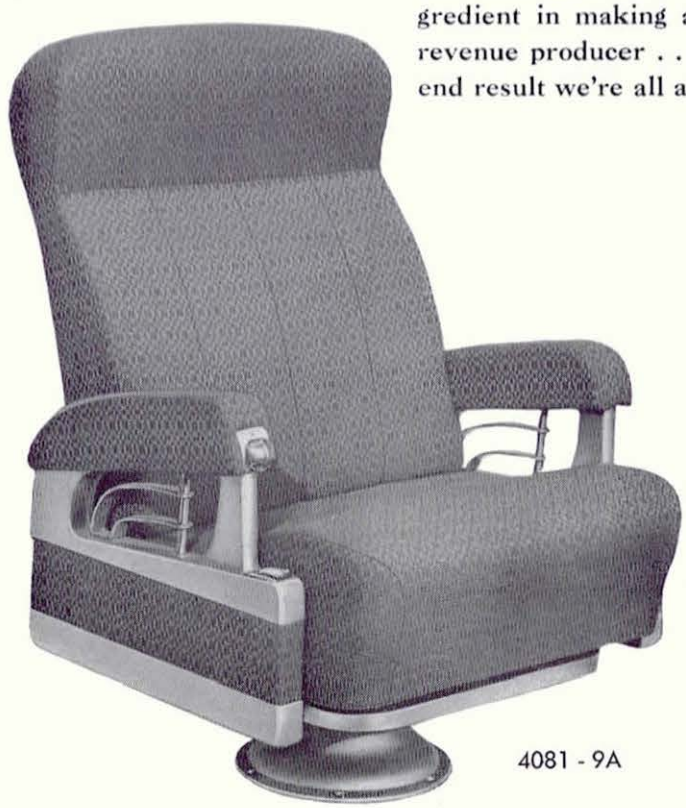
# GENERAL STEEL CASTINGS

GRANITE CITY, ILL. • EDDYSTONE, PA.

# *You Can't Specify Your Passengers' Dimensions*

## THAT'S WHY SO MANY RAILROADS SPECIFY KARPEN COMFORT-DIMENSION SEATING

It's hard to standardize on a certain size passenger . . . but it's easy enough to standardize on Karpen seating—seating that has been *engineered* for every *body's* comfort. Karpen engineers' years of practical experience in fitting seats and backs to body contour enabled them to design seating that gives the maximum amount of real, relaxing comfort to the maximum number of people. Karpen studies *people* because people are the final ingredient in making a Karpen seat a revenue producer . . . And that's the end result we're all after, isn't it?



4081 - 9A

**S. KARPEN & BROS.** TRANSPORTATION SEATING

624 S. MICHIGAN AVE., CHICAGO • ONE PARK AVE., NEW YORK

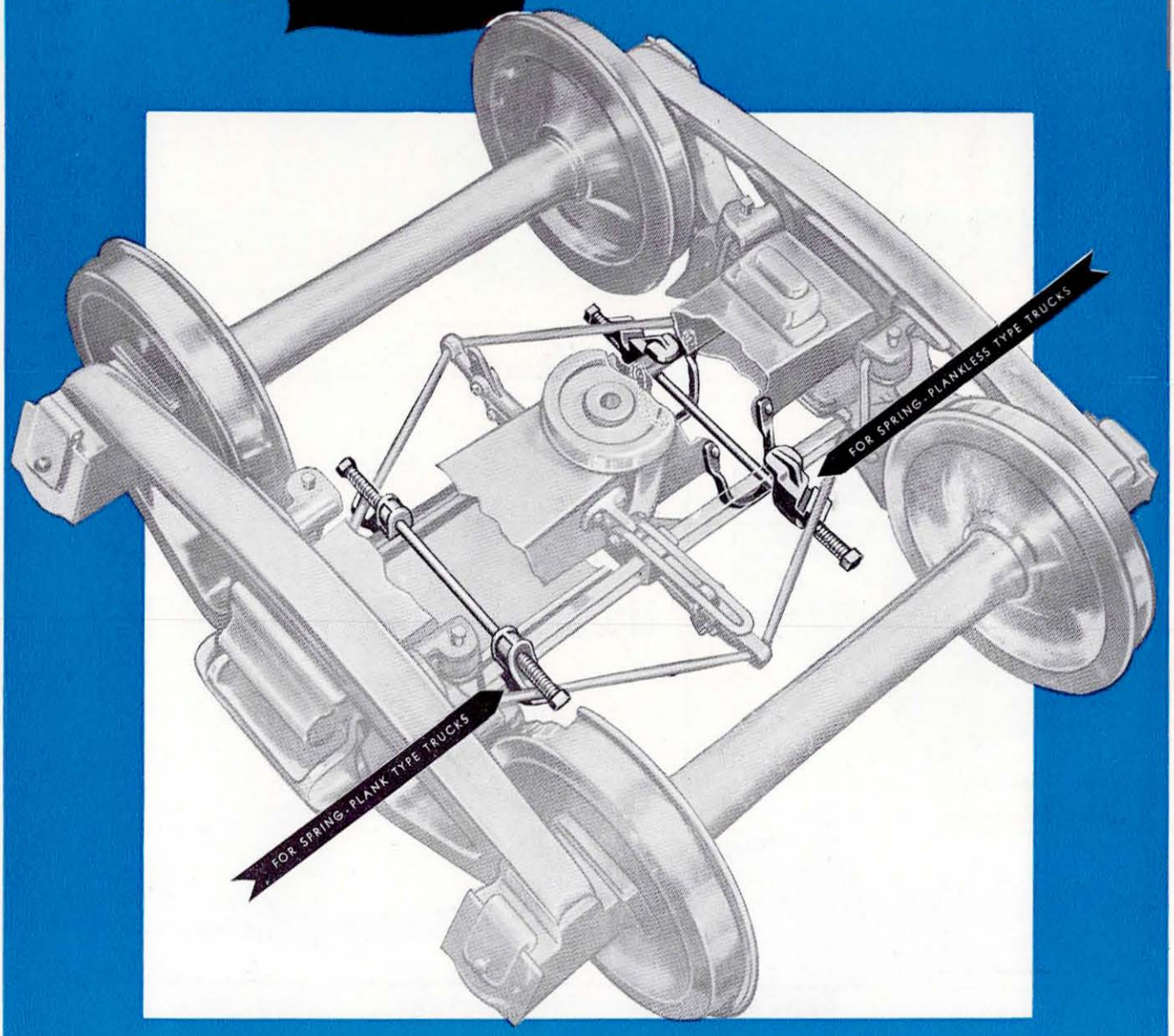
*George B. Cross Company*

EXCLUSIVE SALES AGENTS

Copyright 1949

**KARPEN SEATING . . .** POINT OF CONTACT BETWEEN THE RAILROAD AND ITS PASSENGERS

Improved **GRIPCO** Brake Beam Safety Supports




***DEPENDABILITY—Proven By Many Years Actual Service***

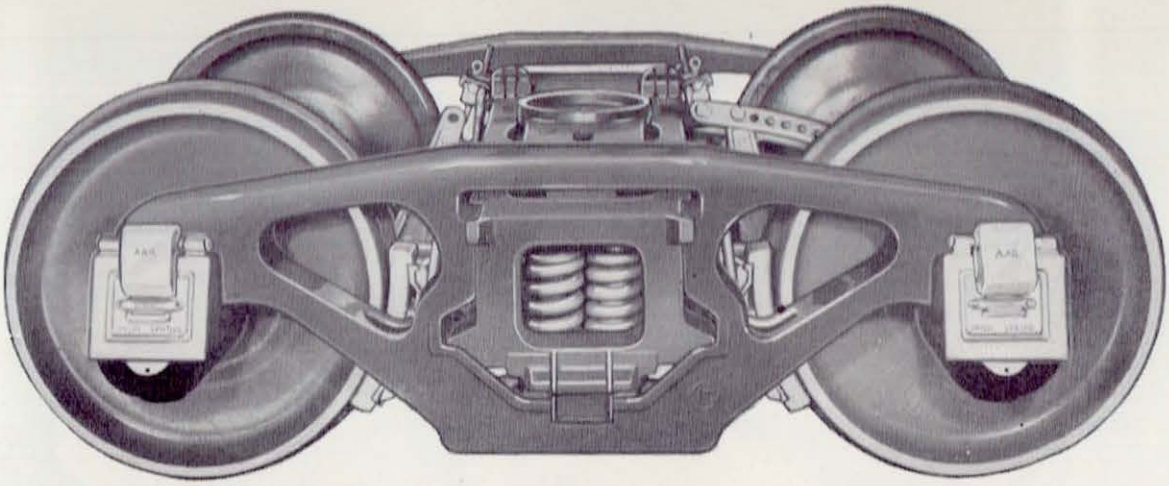
GRIPCO Supports can be removed and replaced without removing nuts.

Spring-Plankless Type Castings are universal and interchangeable with various types of Brake Beams.

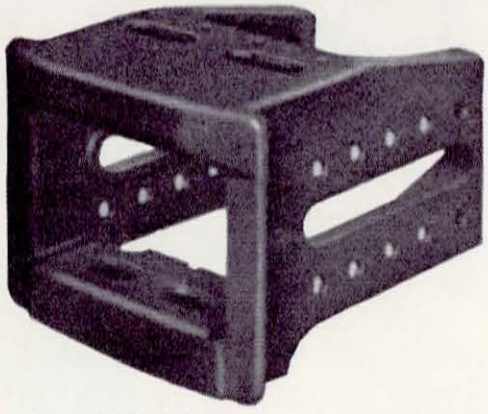
**GRIP NUT COMPANY**
310 South Michigan Avenue
Chicago 4, Illinois

B-3137

***GREATEST SAFETY WITH LOWEST COST***



*When it comes to Railroad Equipment . . .*

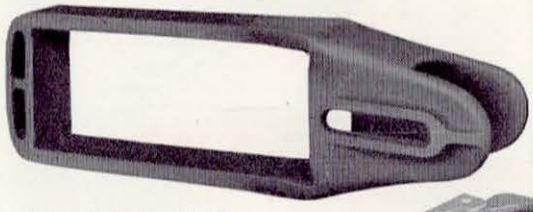


AAR STANDARD
STRIKER

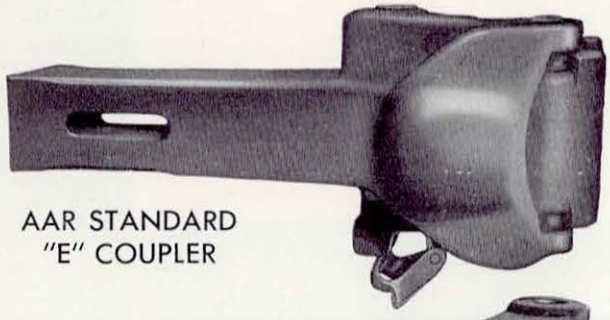
An outstanding source for Freight and Passenger Car and Locomotive Coupler Equipment is

**McCONWAY & TORLEY CORPORATION**

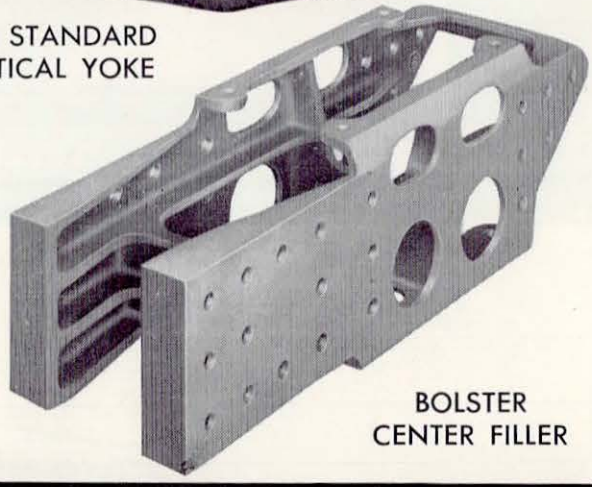
***Manufacturers of***
***Railroad Coupler Equipment***
***Since 1888***



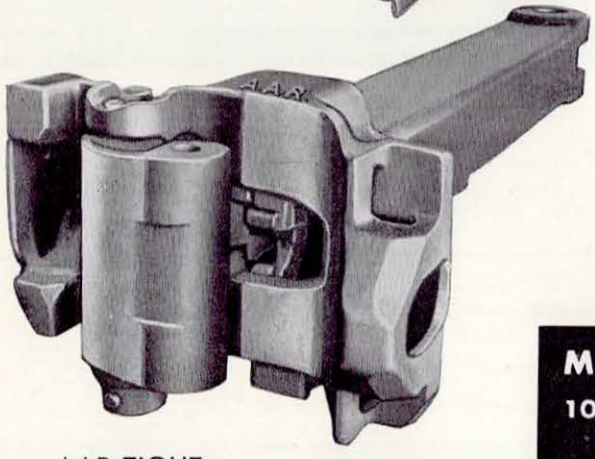
AAR STANDARD
VERTICAL YOKE



AAR STANDARD
"E" COUPLER



BOLSTER
CENTER FILLER

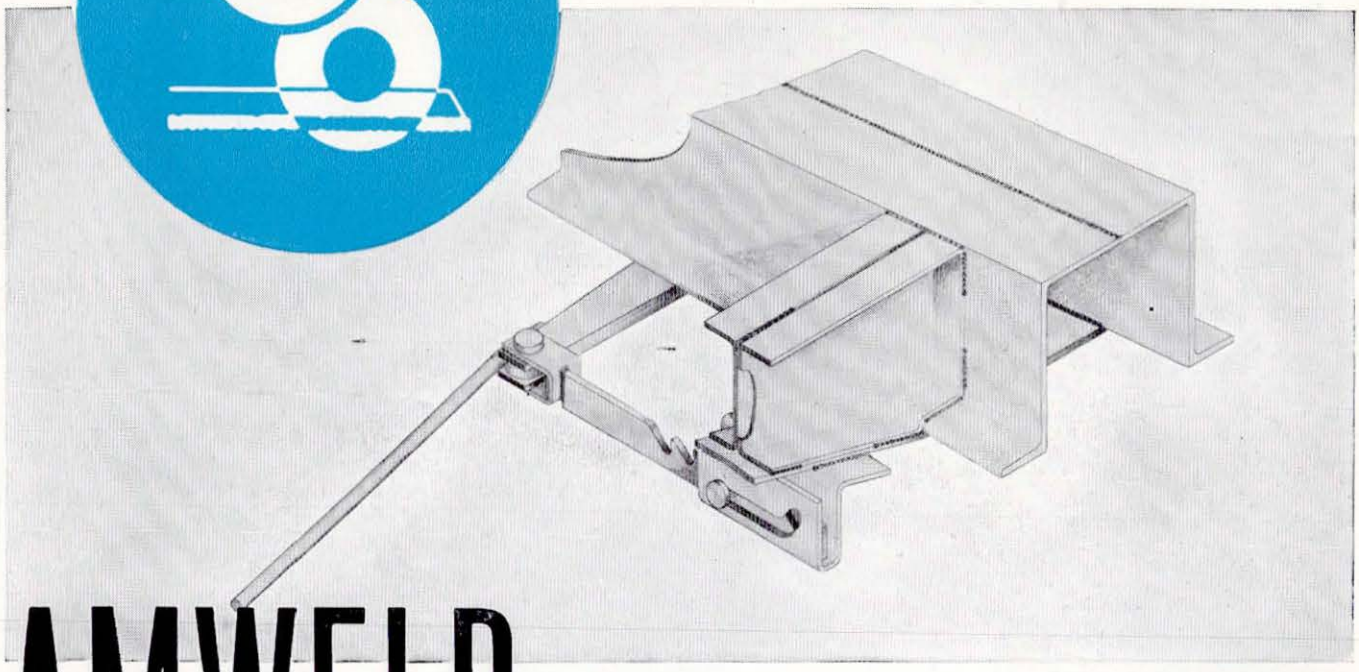


AAR TIGHT
LOCK COUPLERS

**McCONWAY & TORLEY CORPORATION**
**109 48th STREET** **PITTSBURGH, PA.**

**Chicago** **St. Louis** **San Francisco**

Selects



# AMWELD BRAKE SLACK ADJUSTERS

**Applications of "AMWELD" Slack Adjusters have been made on these railroads:**

- Chesapeake and Ohio Railway Company
- Cudahy Car Lines
- Erie Railroad Company
- Ford Motor Company
- General American Transportation Corp.
- Mather Stock Car Co.
- New York Central System
- New York, New Haven & Hartford Railroad Co.
- Norfolk and Western Railway Company
- North American Car Corporation
- Union Railway Co.
- Virginian Railway Co.
- Wheeling and Lake Erie Railway Company
- Baltimore & Ohio R. R.
- Delaware and Hudson Railroad Corporation
- Interstate Railroad Co.
- Southern Railway System

The Chesapeake & Ohio Railway has ordered AMWELD Brake Slack Adjusters, Type "B-2", for 4,000 new 70-ton triple hopper cars; 3,000 to be built by the American Car and Foundry, and 1,000 by the Bethlehem Steel Corporation.

This order is another example that AMWELD Brake Slack Adjusters do everything claimed for them!

AMWELD Brake Slack Adjusters are in operation on many railroads, some of which are listed. Three models, "T", "B", and "C". . . AMWELDS are adaptable and easily installed on all types of freight cars.

*Your request for information regarding AMWELD Brake Slack Adjusters will bring complete data including typical application prints. A representative will be glad to call if you say the word!*

## AMWELD RAILWAY EQUIPMENT

Division of

**THE AMERICAN WELDING & MANUFACTURING COMPANY**

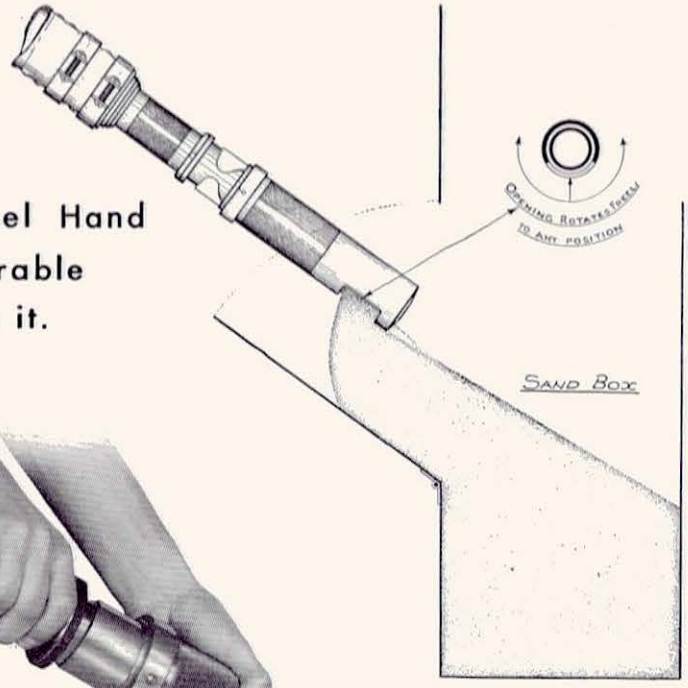
270 DIETZ ROAD • WARREN, OHIO

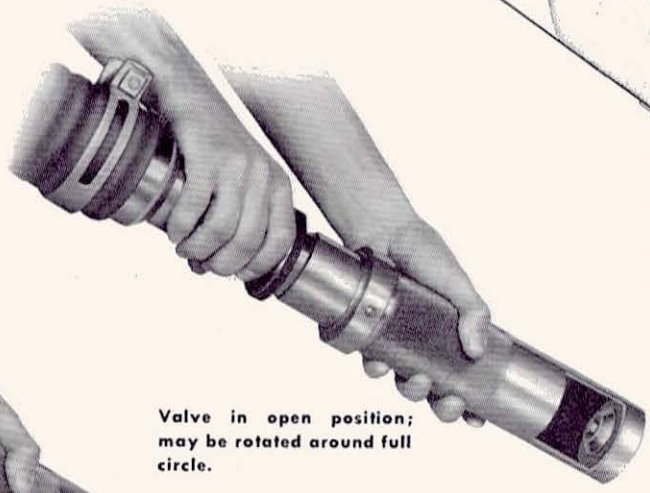
# In answer to user demand for a better Diesel hand sand valve...

# *The* R AND S "ROTO SLEEVE"

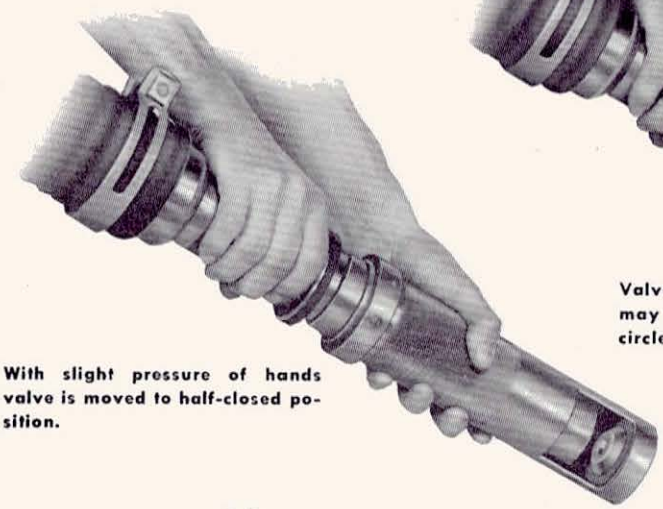
***Wanted:*** a better valve for Diesel sanding — simpler, stronger, faster.

***Here it is:*** the new R and S Diesel Hand Sand Valve. You'll recognize its desirable practical features the minute you see it.



Valve in open position; may be rotated around full circle.



With slight pressure of hands valve is moved to half-closed position.

Closed all the way. An easy twist, either way, and positive friction cam lock holds it secure. To open, merely reverse the action.

***Simple:*** Two tubes—sliding retraction—positive friction cam lock. A screw driver will take it apart—remove guard ring and cam follower.

***Sturdy:*** Seamless tubing—two unit assemblies—gum rubber seals.

***Efficient:*** A twist of the wrist releases and locks. Rotatable into any service position around full circle. Non-clogging —weatherproof.

Exclusive design by Roberts and Schaefer Company. Design features are reserved.

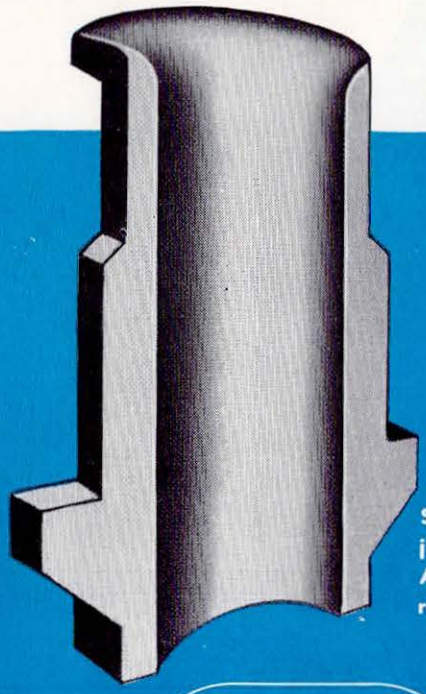
Write for full information.

R AND S COMPANY

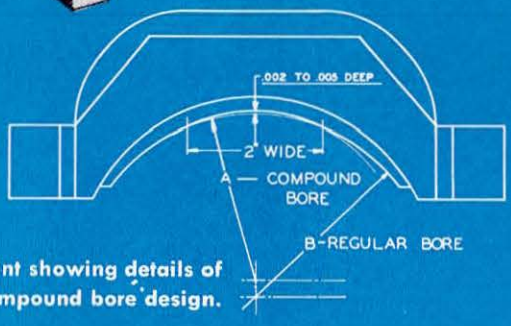
## ROBERTS and SCHAEFER COMPANY

*130 North Wells Street, Chicago 6, Illinois*

# Standard or Compound Bore . . . YOU CAN ALWAYS RELY ON N-B-M JOURNAL BEARINGS



Standard A. A. R. journal bearing. Available in any required size.




Print showing details of compound bore design.

Actual "bluing-in" illustrates wide contact area obtained without hand scraping.

**N-B-M leadership in the journal bearing field can bring you lower bearing costs—and bigger net ton-miles per day.**

## N-B-M JOURNAL BEARINGS— IMPROVED THROUGH THE YEARS

Yes, figures taken from Railroad Facts, 1948 edition, give an excellent testimonial to the big improvement in standard journal bearing efficiency through the years. Railroads actually show an increase of *85.8% in net ton-miles per day, in freight service,* as shown by the figures below:

| | 1926 | 1947 | % Increase |
|---|---|---|---|
| Average Car-Miles per Day | 32.6 | 48.8 | 49.7% |
| Av. Frt. Car Capacity: Tons | 45.1 | 51.4 | 14 % |
| Av. net ton-miles per car per day | 569 | 1057 | 85.8% |

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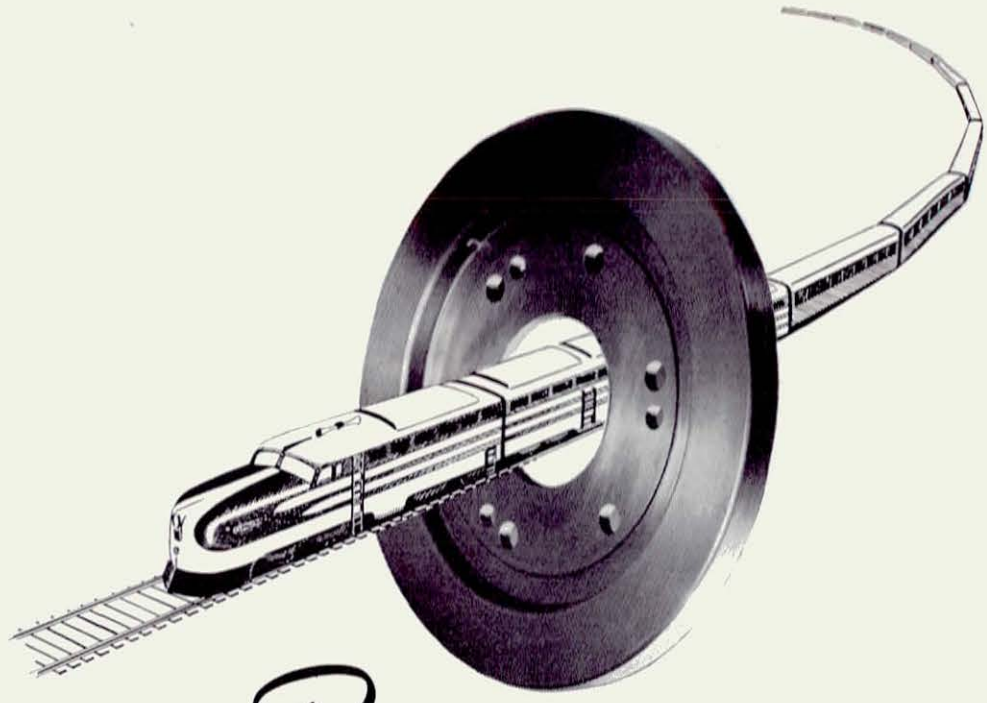

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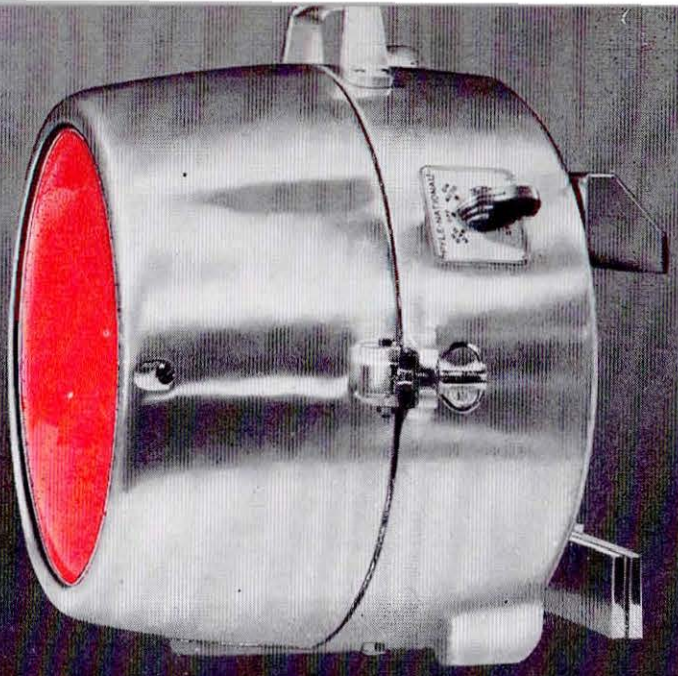

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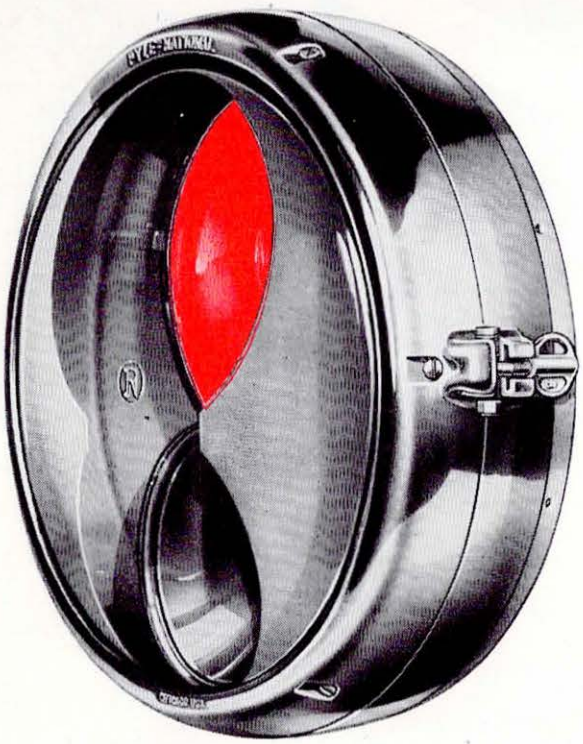

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Volume 126, No. 2 January 8, 1949

# RAILWAY AGE

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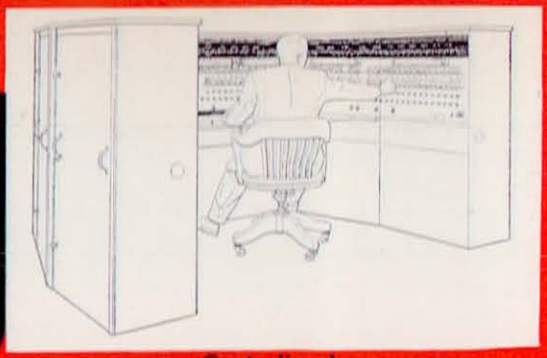

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Electric and Electro-Pneumatic
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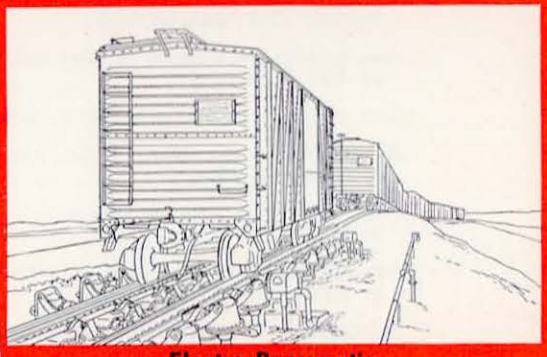

Electro-Pneumatic
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Cab Signals and
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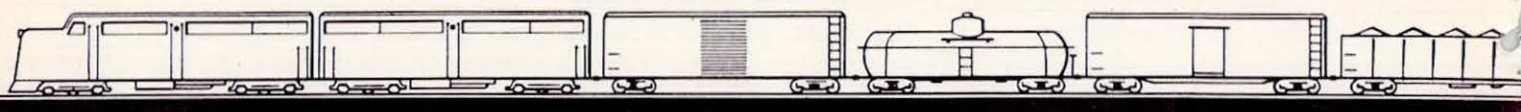


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# THE YEAR AT A GLANCE

**BACKWARD—BUT ALSO FORWARD:** Once again, as a new year begins, *Railway Age* presents its Statistical and Outlook Number, reviewing the results of railway operation in 1948, and looking forward to 1949.

**A YEAR OF PROGRESS:** "The year 1948 was one of progress." So says J. H. Parmelee, vice-president of the Association of American Railroads, and director of its Bureau of Railway Economics, in his annual review of railway operations, which begins on page 188. In support of that statement, Dr. Parmelee cites the facts, among others, that the year's traffic remained at a high level; that excellent efficiency records were attained; that car shortages were reduced as equipment installations increased; that substantial improvements were made in roadway, structures and signals; and that the rate of return, although still below the desired 6 per cent, was slightly higher than in 1947. Details of these and other accomplishments of the year are related in Dr. Parmelee's own article and in others in this issue.

**RECORD EXPENDITURES—AND MORE TO COME:** Despite discouraging handicaps, Class I railroads spent for additions and betterments in 1948 the largest sum ever recorded in a single year—one and one-quarter billion dollars. And estimates so far available indicate that similar expenditures for at least the first quarter of 1949 will be at an even higher rate. But, as pointed out in an article beginning on page 150, the cumulative deficiency in facility improvement left over from years of depression and war has yet to be made up in full.

**EQUIPMENT BUYING CONTINUES HEAVY:** Continuing the postwar trend, the railroads in 1948 placed orders for substantial quantities of new motive power and rolling stock. Locomotive buying—predominantly Diesel—was particularly heavy. Details of equipment orders begin at page 212 for locomotives; 220 for passenger cars, and 222 for freight cars, while typical 1948 equipment prices are listed on page 218. Trends in passenger car design, work equipment and motive power are summarized in other articles starting, respectively, on pages 158, 160 and 180.

**STEEL:** Equipment buying might have been even heavier if the railroads and car builders could have obtained adequate supplies of steel. This critical situation is reviewed in articles on pages 154 and 168.

**A CONSTRUCTION YEAR:** Because they are the only form of transportation that builds and maintains its own right-of-way—instead of using publicly-owned facilities—the railroads always have construction projects under way. They had more of them, in dollar value, in 1948, than in any other year since 1930. A list of such projects is included in the article which begins on page 231. As shown by other articles on pages 227 and 239 signaling and communications installation projects were also stepped up in 1948 as compared with other recent years. Other developments in the signaling and communications fields are covered in articles starting on pages 176 and 178.

**TOWARD AN UNCERTAIN FUTURE:** "Railroads," to quote again from Dr. Parmelee's article, "enter the year 1949 facing considerable uncertainty as to earnings." To some small extent this uncertainty may have been alleviated by the Interstate Commerce Commission's prompt action in awarding the roads an interim Ex Parte 168 freight-rate increase averaging 5.2 per cent, and estimated to yield $425 million a year, as reported on page 242. But there is no likelihood of equally prompt action on their request for a 13 per cent permanent increase; the wage demands of the non-operating brothers—with the threat of a 40-hour week after September 1—have not been settled; there has been talk of demands for fourth-round wage increases; and the levels of prices, general business activity, and traffic are not clearly foreseeable. Nor is there any way of telling what new tribulations will emerge from the halls of Congress or the secret recesses of the so-called Department of Justice. The one prediction that can safely be made, on the basis of equipment actually on order and of contemplated capital expenditures, is that the railroads themselves in 1949 will do their utmost to give better, more efficient and more economical service through continued improvement of their physical plant.

**MERRY-GO-ROUND:** January 1 and December 31 of 1948 were 366 days apart—but on both of them the railroads were confronted with employee demands for wage increases and working rule concessions. A calendar of the intervening developments is included in the article on labor relations on page 156.

**AS THE RAILROADS GO—:** In the last analysis, the railroads themselves can exercise only a limited amount of control over their own future. Their problem, as our editorial forcefully points out, is primarily political, and therefore its solution is also political—in the hands of the politicians, bureaucrats and businessmen who preach private enterprise while practising socialism. Secure in the certainty of the fundamental economy of their service and of the nation's continuing need for it, the railroads *must* make American business understand the danger of general socialism which will sooner or later infect all private enterprise if present policies toward the railroads continue unchecked.

**SERVICE REVIEW:** The dominant, fundamental purpose of all new equipment buying and all new construction of any type is to give better service to passengers and to shippers. Service developments in both fields in 1948 are reviewed in articles starting on pages 170 and 172.

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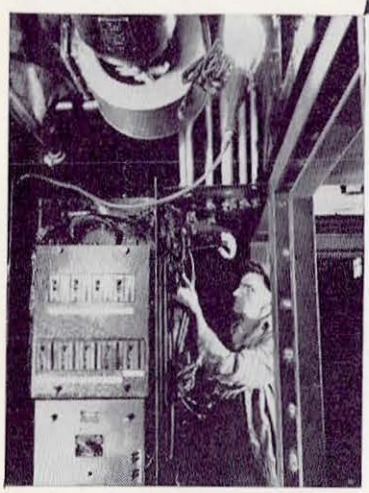

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# AS THE RAILROADS GO, SO WILL GO ALL BUSINESS—AND THE NATION

The central and dominating fact about the situation of the railroads today, as it has been for a good many years, is that nothing very good or bad has happened to them, or is going to happen to them, except by the willful act of preponderant political power. Or, to say the same thing in another way: No invention has yet come along which, technologically or economically, threatens to displace the railroads as the country's primary reliance for transportation service; all the industry's troubles have their origin in politics and not to the slightest degree in technological or economic senility, as some superficial witnesses have asserted. There is an important corollary to this observation, namely, that—just as no innovation in technology or economics has appeared to render the railroads obsolescent—neither have the railroads discovered, nor are they likely to discover, any mechanical or managerial contrivance so helpful to their performance that it is going to increase their earnings faster than resourceful politics can invent means of reducing them.

Constant attention to the improvement of machines and methods to the utmost limit of their resources is of the highest importance to the railroads' strategy—serving the three-fold purpose of (1) offsetting, in part, rising costs and exactions; (2) lending aid in meeting competition; and (3) winning friends for the industry by evidencing a desire to provide the best service that financial limitations will permit. The last-named function is by far the most important of the three because, once the dominant public fully comprehends the existence of an infallible connection between a healthy political environment for the railroads and superior railroad service, an irresistible clamor for the maintenance of such an environment will arise.

There are always enthusiasts for some improvement or another in railroad methods or machines who, in their praiseworthy zeal, insist that their proposals, if adopted, would "solve the railroad problem." They are obviously mistaken, because there is no conceivable contrivance—even one which would reduce operating costs 50 per cent or more—which could not have its benefits siphoned away overnight by inimical political action in the form of more onerous working rules, higher wages, reduced rates, or gifts of additional billions of tax money to provide facilities for the railroads' rivals. *A political problem can have only a political solution*—although economic and technological improvements are helpful and necessary as ingredients contributing to a political solution. No steward of large properties can expect to have larger opportunities offered to him who does not first prove his capacity and good intentions by exacting the very best possible performance from the means already at his disposal.

It is a whole lot better to be in trouble as a result of politics than to suffer adversity from the opera-

tion of the laws of economics or physics—because there is no salvation for an industry when laws of nature start to work against its survival. There is always a solution to trouble originating in politics because politics will operate in favor of an industry rather than against it, if the people who wield dominant political power can be awakened to a sense of their selfish interest in the industry's well-being.

The railroads have done no better than they have done, so far, because the effort put forth to explain and dramatize the identity between prosperity for them and the interests of working people, of farmers, of business men, and of the defense authorities has been quite inadequate to the magnitude of the task. To concede that the railroads have not yet attained perfection in this direction is not, however, to deny them credit due for great accomplishment, because—considering the number of the forces arrayed against them, or wholly indifferent to their existence—the retention of as much prosperity as they have retained bears eloquent witness to a large quantity of intelligent endeavor.

### *Assets and Liabilities*

Looking back at the things the railroads did, and had done to them, in 1948—and forward to what 1949 may hold in store—there is nothing to justify lowness of spirits; there is also nothing to justify a complacent belief that, somehow, everything is going to turn out all right. The industry earned $970 million of net railway operating income in 1948, compared to $791 million in 1947, $625 million in 1946, and $859 in 1945. Expenditures in 1948 for increasing the capacity of the railroads' plant and the quality of their service totaled $1,250 million—the largest outlay in the history of the industry. Capital improvements for the first quarter of 1949 are estimated at $364 million—or nearly 40 per cent more than in the first quarter of 1948.

Such items are definitely on the asset side of the balance sheet—not alone from the standpoint of the selfish interest of railroad owners, but also from that of the public interest in the continuance of economical and dependable transportation service. There is a somber side to the picture, too, which no observant realist can dismiss—made up of such items as these:

(1) Persistent unwillingness of the Interstate Commerce Commission, in its control of rates, ever to go further than a grudging half-way in meeting the railroads' revenue needs;

(2) The chronic failure of regulatory agencies, taxing authorities, legislators, the Justice Department and other arms of government to recognize that, in policing the railroads, they are not dealing with criminals meriting extinction but with useful public servants who should be aided rather than crippled;

(3) The increasing resistance of shippers to rate increases to compensate the railroads for inflationary rises in costs—when practically all of these self-same shippers have raised prices to *their* customers by much larger ratios than those the railroads have sought;

(4) The threat and actual action by such shippers, in retaliation for railroad rate increases, to divert much of their traffic to socialized transportation (i.e., waterways and highways); and the support by many shippers of increased appropriations of tax funds for enlarged socialized transportation, while they pretend to be devoted worshippers at the shrine of private enterprise and free institutions; and

(5) The continuing and increasing unconcern of the leadership of most of the railway labor organizations for the financial health of the industry which sustains their members, and—abetted by equally irresponsible governmental officials—the carving off by the unions of repeated pounds of flesh from the industry's vital sinews, as was done notoriously in the 20-per-cent-plus hourly increase in the cost of most of their labor inflicted on the railroads in the closing weeks of the old year.

In the face of such politicial difficulties the railroads have to sustain them the certain knowledge that the fundamental economy of their service and the nation's need for it are undiminished. The tell-tale symptoms of industrial "old age" and decadence are (a) a diminishing economic demand for the industry's product—e.g., as happened to bedroom chinaware, gas mantles, and buggies; and (b) the slowing down or complete cessation of increased efficiency of production. On neither of these scores is there any evidence to qualify the railroads for "obsolescent" status, but quite the contrary. In 1947 they were called upon to produce 47 per cent more ton-miles and 50 per cent more passenger-miles than in 1929, and they did the job with 20 per cent fewer man-hours of labor.

### *The National Welfare at Stake*

This nation—with wide dispersal of the industrial plants upon which its standard of living and its military defense absolutely depend—needs its "assembly line" transportation plant, i.e., its railroads, more vitally than ever before in its history. Times of stress always provide the test for what is essential. Canapes and caviar are an indulgence much esteemed by the jaded appetites of the habitually well-fed—but a man who is really hungry will exercise his franchise, every time, in favor of meat and potatoes. Similarly, when war came to the American people—and they had to conserve labor and materials and time—they did not look to labor-

wasting trucks and sluggish barges to take on the tremendously increased transportation load; they gave all of the increase to the railroads.

Thus, until the statesmen who rule the land can give acceptable assurance that, never again, will the nation be so endangered that it will once more have to eliminate all waste of manpower, of fuel, and of materials in transportation—so it can divert the resources thus economized to the production of weapons of defense—then national survival will continue to require that the economical railroads be maintained ready for use, and that their capacity be increased as industrial output rises. If many customers insist upon a richer variety in their transportation diet in times of peace (i.e., since the taxpayers foot most of the bill for the expensive variants in the transportation menu), then that just means that somebody else besides these holiday-making customers will have to support the old reliable railroad machine during their absence. Because, when trouble comes, these wandering patrons will all be back again—and the railroads, as the only transportation agency which accepts in full the responsibilities of its common-carrier status, must be ready for them.

### *Pioneers in Industrial Experience*

It is not from old age or from lagging behind other industries that the railroads suffer troubles from which most other industries are free—but because *the railroads are ahead of all other large industries in time.* They have had to beat a path in the trackless forest of social relations, in which other industries have followed along with less discomfort. The railroads were the first large corporate enterprises, and had to do all the pioneering in finding means to raise and protect large-scale investment funds. They had no experience of others to guide them and thus minimize their troubles; they had to make all the trial-and-error experiments themselves. They were the first industry to meet the problem of nationwide labor organization, and they had solved the problem pretty well, too, until other industries with less experience maladroitly allowed diseases of unionism to develop which have since spread back to the railroads from outside contagion, rather than being engendered by poor internal health.

The railroads were also the first industry to reach the eminence which gave excuse for public regulation, and the railroads served as the guinea pig upon which all the law and administrative precedents now being widely applied to all kinds of business were tried out and perfected. And now they are the first industry to reach the still undefined borderland between private and governmental enterprise, and the rules for defining the boundary between freedom and socialism are going to be worked out on the railroads, establishing precedents for later application to all other industry. The late Wendell Willkie—before he got into politics and during the lamentably brief period when he served free institutions as the most eloquent spokesman they have ever had in modern times—once uttered a warning to all businessmen to the effect that, if they sought foreknowledge of what was going to happen to them, all they had to do was to observe what was happening to the railroads.

### *In the Businessman's Own Interest*

The business community did not heed his advice then and it is not heeding it now—else reputable business men would not be condoning and abetting, as they are, the intolerable socialistic competition with its cost defrayed from taxation which is encompassing the railroads more threateningly every day. If these business men were heeding the voice of intelligence or experience, they would not be resisting rates to compensate the railroads for the cost of the 40-hour week and other onerous labor exactions—which railway employees did not invent but merely acquired by contagion from other industries which put up no resistance to awarding such concessions to their own employees; and which immediately passed along the cost, and usually then some, to their customers.

There can be only one reason why business leaders and Americans generally are more often found aiding the cause of socialism in transportation than in resisting it—and why regulation of the railroads to the point of strangulation seldom raises their blood pressure. That reason is that *nobody has taken the trouble to show them how and wherein grave-digging for the railroads as self-sustaining private enterprise is merely a practice work-out for the burial of all private business and all free institutions.*

The nations of western Europe succeeded in getting Uncle Sam appropriately scared of communism; and thereafter they found it easy enough to persuade the old gentleman to contribute several billion dollars to improve their living standards lest they be infected with this loathsome disease. With the success of this strategic course thus so brilliantly demonstrated, the railroads should not be dismayed at the similar but far less imposing task which so obviously confronts them—namely, that of pointing out to Americans, and especially to American business, the general socialist infection which would certainly follow from the socialization of transportation. There is no more danger that general communization would follow from the communization of Europe than there is that general socialization in America would follow from socialization of the railroads; and socialism is only the half-way house on the road to communism.

# RECORD CAPITAL EXPENDITURES—
# BUT STILL FAR BELOW THE NATION'S NEED

*The railroads' 1948 outlay for additions and betterments was the greatest in history, but a realistic appraisal of their progress since 1930 reveals a shocking cumulative deficiency in the enlargement and improvement of their facilities—This deficiency must be made up quickly if railroad capacity is to remain adequate —It can be made up if the public concern is awakened*

By C. B. TAVENNER
Managing Editor

In 1948 the Class I railroads of the United States made capital expenditures for additions and betterments totaling $1,250 million — the largest sum ever spent in one year for such purposes since the records have been kept. The investment was made despite discouraging handicaps — a continuous shortage of steel, wage disputes with employees that would have brought on a nationwide strike if the federal government had not "seized" the railroads, uncertainties as to revenues that lasted until the Ex Parte 166 freight rate increase was approved August 21, a persistent decline in revenue passenger-miles, and threats that shippers would turn to other means of transportation for much of their higher-rated traffic.

The $1,250 million gross capital expenditures of 1948 exceeded by 47.6 per cent the 1947 outlay of $847 million, yet there is every evidence that comparable 1949 expenditures — barring some sudden economic crisis — will be substantially greater than the 1948 figure. Estimates submitted to the Interstate Commerce Commission by the railroads indicate that their gross capital expenditures in the first quarter of 1949 will be about $364 million, exceeding the same period last year by $101 million. If the same percentage increase should be maintained over the twelve months the outlay for additions and betterments to railroad fixed property and equipment in 1949 would reach some $1,730 million.

Whether the railroads will be able to continue to make capital investments throughout 1949 at such a rate depends on many factors, some of them completely beyond the railroads' control. But there is no doubt of the railroads' need — the country's need — for expenditures of even greater magnitude.

The railroads' recent remarkable record of performance has diverted attention from the disturbing fact that they are rapidly wearing out. They have been wearing out their equipment and fixed property continuously since the first train ran on American rails, but such normal wear and tear was more than offset year after year and decade after decade by the investment of more and more capital to enable the railroads to keep pace with the growth of the nation and the expansion of its economy. This process continued until the great depression of the Thirties. Then, for several years, the railroads' investment in road and equipment actually decreased (that is, replacements and additions did not keep pace with retirements and depreciation), and not until 1943 did their total capital investment recover the level it had attained in 1930.

The railroads' steady attrition—"living on their fat" — that went on during the war and afterwards shows up in many ways. Of some 1,742,000 freight cars owned by the railroads in 1947, for example, about 56 per cent were over 20 years old and 21 per cent were over 30 years old. Of the 39,629 passenger-train cars they owned in 1947, 71.9 per cent were over 20 years old and 40.7 per cent were over 30 years old. Of the 41,719 locomotives they owned in 1947, 67.9 per cent were built before 1925 and 35.7 per cent before 1915. Adequate statistics are not available on the age of freight-houses and shops and other structures, or the degree of obsolescence of shop tools and work equipment, but the observant traveler cannot avoid noticing many instances where the railroad plant is woefully antiquated.

The Class I railroads' total capital expenditures for roadway and structures in 1947 amounted to $298.8 million; in 1948 they were up to $330.9 million; but in 1930 they were $544.3 million. The railroads spent $45 million for 1,444 thousand tons of new replacement rail in 1947, but in 1930 they spent $47 million for 1,517 thousand tons. They spent $62 million in 1947 for additional track, but in 1930 they spent $115 million. For additional ballast the figures are $5 million in 1947 as compared to $11 million in 1930. In 1947 the railroads laid 35.3 million treated ties to replace old ties, but in 1930 they laid 49.7 million treated ties as replacements — not to mention another 13.6 million not treated. In 1947 they spent $318 million for new construction; in 1930, $521 million.

These disparities in the postwar rate of essential railway capital expenditures as compared to 1930 emphasize the fact that the American railroads stopped growing in 1930. They did not stop improving. They have bigger freight cars, better locomotives, finer passenger trains, safer systems of signals and communications, refined operating techniques, and notably closer rela-

tions with their customers. But they stopped growing in 1930, and did not resume their growth until 1943. They have grown since then, but no more rapidly than in the Twenties. The national economy, on the other hand, after a depression set-back, has expanded at an accelerated rate and more than made up for the doldrums of the Thirties. The result is that the railroads are compelled to do business in 1949 with what are, in many respects, 1935-model properties.

One way — perhaps over-simplified — to measure the growth of the nation's business is by the increase in population. The more people there are, the more commerce results from their activities. The present estimated population is about 21 per cent greater than the 1930 total; the railroads' total property investment is approximately 9.7 per cent greater than it was in 1930. Another way to measure the growth of the nation's business is in terms of the gross national product — that is, the market value of all the goods and services produced in the country in a year (including the services of the railroads). This index of the nation's business declined, of course, during the Thirties, but in recent years it has gone up in leaps and bounds until the estimate for 1948 is $253 billion, an increase of 178 per cent over 1930's $90.9 billion. In comparison, the railroads' gross capital expenditures in 1948 were up about 43 per cent over 1930.

### Depreciated Dollars

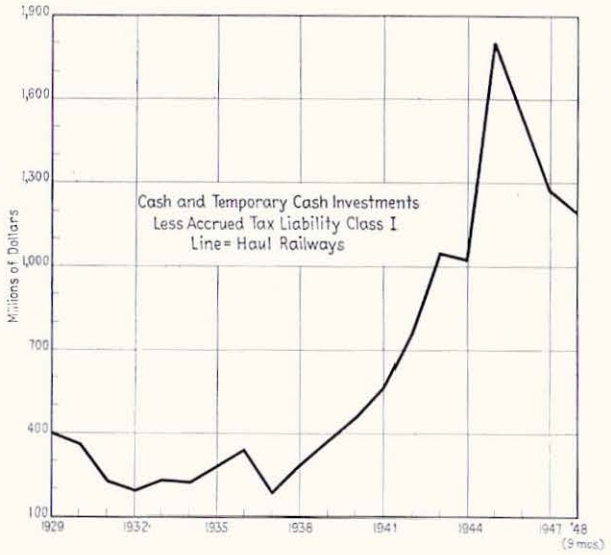
The 178 per cent increase in the gross national product indicated for 1948 over 1930 does not, of course, represent an equivalent increase in physical goods or services, because 1948 dollars did not buy what 1930 dollars bought. The railroads' 1948 dollars likewise had less buying power than their 1930 dollars. A dollar in 1948 would buy only that quantity of materials at wholesale that 47 cents would buy in 1930. If the railroads could have spent 1930 dollars in 1948, they would have had to spend for their capitalized additions and betterments not $1,250 million, but $588 million. And in 1930, spending 1930 dollars, their gross capital expenditures were $873 million.

The railroads' lack of sufficient resources to keep pace with the country's economic expansion since the Thirties can be stated in another way. During the 10 years ended with 1930, when the railroads' capital expenditures were in line with the general development of business, the average annual increase in the property investment of the Class I roads (before depreciation) was $606 million. In the next 17 years through the end of 1947, the average annual increase in the property investment of the Class I roads (before depreciation) was only $151.7 million. The total increase in that 17-year period was $2,579 million. If the Class I roads' property investment had increased from 1930 through 1947 at the same rate that it did increase from 1920 through 1930, the total increase for the 17-year period would have been (before depreciation) $10,301 million. In other words, to have maintained throughout the 17 years ended with 1947 the rate of development and improvement of their properties that was maintained in the Twenties, the Class I roads would have had to invest $7,722 million more than they did invest.

While the railroads produce the safest transportation and produce it at a lower unit cost than competing carriers, they do not produce transportation as efficiently as they could if they were not handicapped with so much worn or obsolescent plant and equipment. Examples are mentioned in this issue of *Railway Age* of installations of modern signaling, of up-to-date retarder-equipped yards, of mechanical equipment for stores and freighthouse work, of maintenance-of-way machinery, that show very large immediate returns on the investment. Similar instances are reported throughout the year. The opportunities for additions and betterments on a vast scale are legion. They are recognized. The difficulty facing the railroads is, as it has been for years, and particularly since the onset of the depression in the Thirties, how to pay for these money-saving necessities.

President Ralph Budd of the Burlington brought this problem before the I.C.C. last December during the hearings on the railroads' Ex Parte 168 application for authority to increase rates an additional 8 per cent at once in order partially to offset the latest round of wage increases. "The only feasible method of providing adequate and efficient transportation," he said, "and of adapting the railroad plant to the growing and changing needs of the country, is to do so gradually but continuously. It is improvident, if not impossible, to let the plant deteriorate for some years and then try quickly to place it in condition to meet some great emergency. . . .

"Every kind of productive activity in the United States has made spectacular progress by introducing and perfecting new means of increasing output and making better goods. This is true of farming, mining, and manufacturing, the three basic sources of material wealth. The demand for capital to continue this program of expansion and modernization in other industries is a matter of common knowledge. Railroads are in similar need of making capital additions and im-




**While the railroads continued to dip into their reserves in 1948 to finance improvements, the rate of depletion of assets tended to level off, suggesting that of the capital accumulated during the war years, little more remains than is needed for current operations**

provements in order to give the up-to-date service the country should have, and also in order to take advantage of technological advances which will increase their efficiency and capacity.

"Their first and vital need of course is to replace their old, worn-out cars and locomotives with units of the latest types, and to add some new units. Equally necessary, but not so obvious, is the replacing of more old track rail than has been done, in order to catch up on the wear and tear due to the heavy traffic since 1941. A more extensive program of modernization of shops and shop tools should also be undertaken. Many railroad shops are not as well equipped or as well arranged as they should be, and many railroad shop tools are obsolescent. The new cars and locomotives naturally call for tools of greater precision than the old ones possess.

### *Improvements Cumulative in Effect*

"These replacements and improvements in rolling stock and fixed property, however, are the minimum that must be done. They alone are not enough to meet the requirements that the United States should have the best railway services that it is practicable to provide. To do that there must be a constant striving toward physical perfection. As a goal it will never be reached, but in large degree it can be approached by having a betterment program that will in general revise some of the most restrictive sections of track each year and change them from slow zones to zones of unrestricted speed. Of course this general revision of standards cannot be accomplished quickly, at least not in its entirety. But improvements can be made in many places simultaneously, and the cumulative effect in a few years would be striking."

A particularly significant fact about the railroads' gross capital expenditures in 1948 is the relative unimportance of the outlays for improvements and additions to the fixed properties — road and structures. The actual expenditure of the Class I roads in this category was estimated by them at $330.9 million last year, out of the $1,250 million total, or 26.5 per cent. The figures are available for road and equipment expenditures separately back to 1921, and not in any of the 26 years before last year were road expenditures such a small portion of the total capital expenditures.

The conclusion is scarcely avoidable that probably the most important element favoring the greater increase in expenditures for equipment is the relative ease with which those expenditures can be financed as compared to fixed property outlays.

Within the limits set by a given railroad's ability to keep up its regular payments on equipment obligations, such securities can be sold at comparatively favorable interest rates in practically any kind of financial weather, even by carriers with the poorest credit standing.

But capital expenditures for roadway and structures cannot be financed so conveniently. They can be paid for from earnings, from borrowed money (generally secured by fixed-interest mortgages) or from the sale of equities capitalizing the improvements. Since the onset of the depression of the Thirties, the latter two of these sources of capital have been almost wholly unavailable to the railroads.

In recent years no railroad has even attempted to raise new money by the public sale of stock. The bulk of the additional capital investment made by the carriers since 1930 — $2,579 million — has come from earnings. In other words, the owners of the railroads, the people whose money already is invested in them, have provided the greater part of the money for the improvements and betterments the railroads have made. No one else has considered the railroads a sufficiently good credit risk to supply additional capital to support the vastly accelerated program of renewals and betterments that their condition and the country's development call for.

The owners of the railroads have not increased their investments in the carriers altogether out of choice. In most cases it has been a matter of pure necessity. Railroad dividends since 1930 have been notoriously low, as compared to the dividends of companies engaged in other businesses. Owners of railroad stocks have not been so satisfied with these dividends that they have welcomed the opportunity to enlarge their investments in the carriers. The low estate of railroad equities in the markets is adequate evidence of the industry's standing.

The Railroad Securities Committee of the Investment Bankers Association of America summed up the situation in a few words as recently as last month, in a report to the Hollywood, Fla., annual convention of that organization. It said that "most railroads will find increasing difficulty in financing and refinancing except at higher interest

**Table I — Selected Balance Sheet Items — Class I Line-Haul Railways**

| Year | Cash and Temporary Cash Investments (000) | Total Current Assets (000) | Total Current Liabilities (000) | Excess of Current Assets over Liabilities (000) | Total Long-Term Debt (000) | Total Corporate Surplus (000) |
|---|---|---|---|---|---|---|
| 1929* | $677,955 | $1,717,953 | $1,200,984 | $516,969 | $11,138,121 | $5,029,171 |
| 1930* | 592,071 | 1,510,975 | 1,162,170 | 348,805 | 11,174,816 | 4,577,730 |
| 1931 | 419,510 | 1,213,350 | 1,147,239 | 66,111 | 11,153,678 | 4,395,508 |
| 1932 | 379,136 | 1,063,271 | 1,130,731 | 67,460 | 11,247,777 | 4,094,531 |
| 1933 | 394,117 | 1,034,560 | 1,261,382 | — 226,822 | 11,112,005 | 3,900,883 |
| 1934 | 380,212 | 1,058,326 | 1,571,326 | — 412,995 | 11,041,472 | 3,714,302 |
| 1935 | 439,403 | 1,086,467 | 1,670,767 | — 584,300 | 10,821,788 | 3,507,220 |
| 1936 | 578,343 | 1,292,421 | 1,885,574 | — 593,153 | 10,452,266 | 3,349,889 |
| 1937 | 392,486 | 1,143,990 | 1,937,830 | — 793,840 | 10,686,814 | 3,126,391 |
| 1938 | 480,550 | 1,120,968 | 2,243,961 | —1,122,993 | 10,558,723 | 2,739,742 |
| 1939 | 578,359 | 1,292,705 | 2,555,903 | —1,263,198 | 10,352,646 | 2,563,879 |
| 1940 | 680,400 | 1,442,142 | 697,200† | 744,942 | 11,288,311† | 2,474,249 |
| 1941 | 904,600 | 1,914,544 | 1,115,320‡ | 799,224 | 11,186,063 | 2,666,625 |
| 1942 | 1,736,933 | 3,065,093 | 1,806,030 | 1,259,063 | 10,879,476 | 3,167,986 |
| 1943 | 2,807,275 | 4,497,065 | 2,923,078 | 1,573,987 | 10,462,770 | 3,748,508 |
| 1944 | 2,753,560 | 4,488,042 | 2,844,042 | 1,643,832 | 9,830,186 | 4,327,893 |
| 1945 | 2,545,909 | 4,345,830 | 2,108,245 | 2,237,585 | 9,286,001 | 4,608,846 |
| 1946 | 1,950,874 | 3,494,260 | 1,584,433 | 1,909,827 | 9,093,281 | 4,638,958 |
| 1947 | 1,908,887 | 3,575,914 | 1,942,772 | 1,633,142 | 8,831,806 | 5,174,106 |
| 1948 | 1,939,535 | 3,706,919 | 2,086,235 | 1,620,684 | (1948 totals are Sept. 30) | |

* Switching and Terminal Companies included.
† In 1940 and thereafter long-term debt in default is included in long-term debt. In years prior thereto it is included in current liabilities. Likewise in 1940 and thereafter default interest is removed from current liabilities to deferred liabilities.
‡ Tax liability included in 1941 and thereafter.

## Table II—Changes in Cash and Current Assets of Individual Large Railroads*

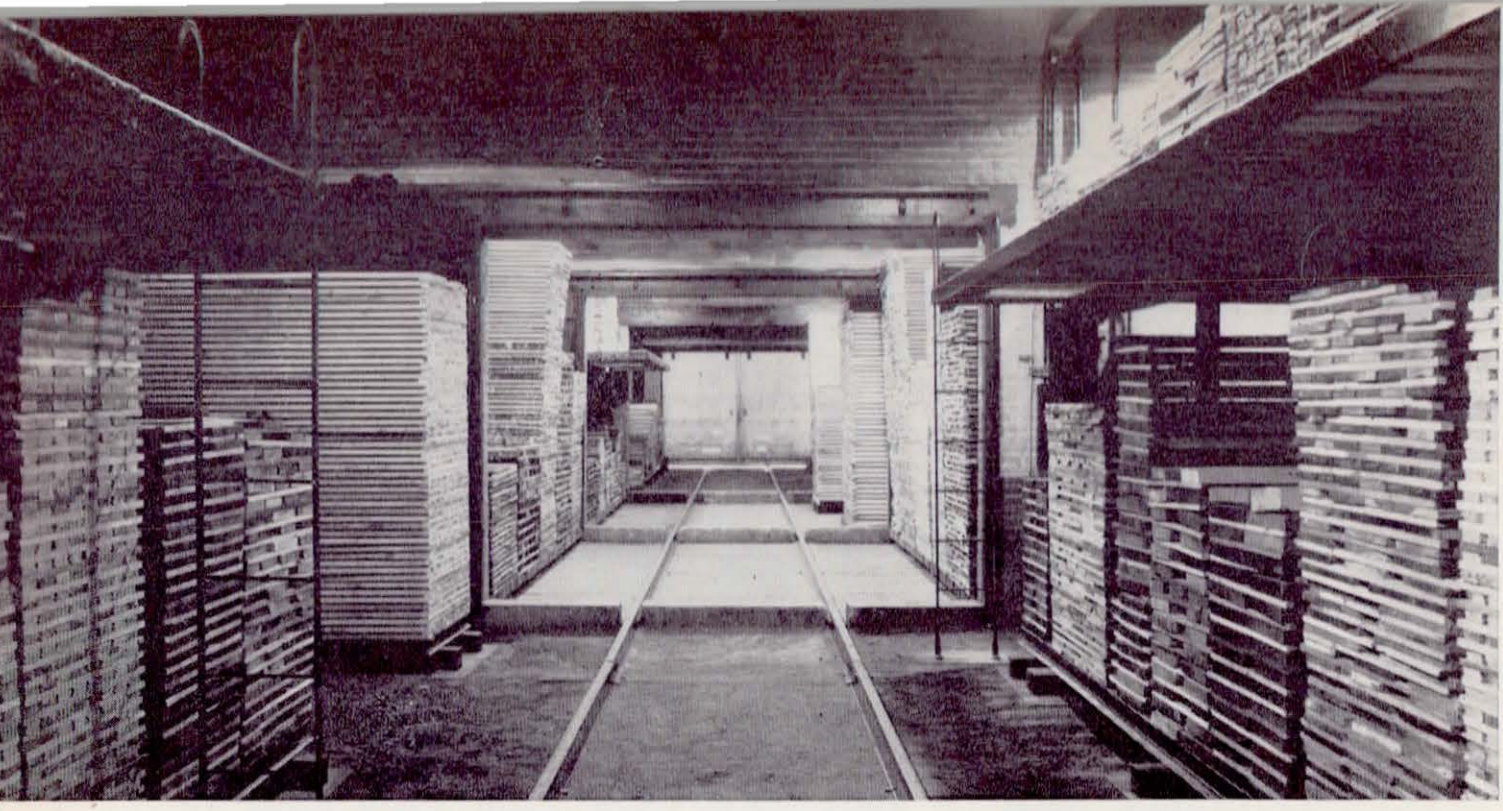
| | Cash & Tempory Cash Investments Sept. 30 | | Inc. or Dec. | Total Current Assets | | Total Current Liabilities | | Excess of Current Assets over Liabilities | | Inc. or Dec. |
|---|---|---|---|---|---|---|---|---|---|---|
| | 1948 | 1947 | % | End of Sept. 1948 | End of Sept. 1947 | End of Sept. 1948 | End of Sept. 1947 | End of Sept. 1948 | End of Sept. 1947 | % |
| A. T. & S. F. | $151,141,640 | $149,196,822 | + 1 | $243,618,724 | $228,640,685 | $106,838,553 | $95,828,671 | $136,780,171 | $132,762,014 | + 3 |
| A. C. L. | 18,489,790 | 16,208,672 | + 14 | 46,324,937 | 43,364,196 | 22,718,926 | 20,907,027 | 23,606,011 | 22,457,169 | + 5 |
| B. & O. | 46,895,444 | 41,983,208 | + 12 | 100,596,474 | 96,053,313 | 57,863,847 | 53,552,009 | 42,732,627 | 42,501,304 | + 1 |
| B. & M. | 17,838,117 | 15,931,191 | + 12 | 32,030,306 | 27,879,568 | 19,135,626 | 16,226,035 | 12,894,680 | 11,671,533 | + 10 |
| C. of Ga. | 3,446,464 | 12,099,572 | − 72 | 15,687,712 | 23,950,914 | 6,279,611 | 5,555,748 | 9,408,101 | 18,395,166 | − 49 |
| C. of N. J. | 3,951,869 | 5,653,448 | − 30 | 16,524,556 | 19,234,322 | 12,036,605 | 10,120,528 | 4,497,951 | 9,113,794 | − 51 |
| C. of Pa. | 5,984,993 | 5,268,085 | + 14 | 9,495,342 | 8,147,785 | 4,481,915 | 4,795,412 | 5,013,427 | 3,352,373 | + 49 |
| C. & O.§ | 18,633,634 | 52,360,307 | − 65 | 77,443,431 | 103,979,158 | 84,187,542 | 76,934,630 | −6,744,111 | 27,044,528 | † |
| C. & E. I. | 4,963,654 | 4,820,769 | + 3 | 10,787,712 | 10,258,107 | 6,835,926 | 5,484,447 | 3,951,786 | 4,773,660 | − 17 |
| C. & N. W. | 23,972,358 | 25,195,109 | − 5 | 60,884,674 | 59,808,796 | 37,308,176 | 34,926,681 | 23,576,498 | 24,882,115 | − 5 |
| C. B. & Q. | 45,662,323 | 51,749,259 | − 12 | 91,015,847 | 87,679,361 | 53,180,124 | 47,801,134 | 37,835,723 | 39,878,227 | − 5 |
| C. G. W. | 6,692,306 | 7,197,434 | − 7 | 11,185,472 | 11,408,537 | 8,975,505 | 6,342,327 | 2,209,967 | 5,066,210 | − 56 |
| C. M. St. P. & P. | 40,629,644 | 39,972,553 | + 2 | 96,779,975 | 97,682,972 | 43,296,590 | 42,467,620 | 53,483,385 | 55,215,352 | − 3 |
| C. R. I. & P. | 51,440,735 | 92,937,385 | − 45 | 81,972,315 | 118,277,343 | 45,135,029 | 28,173,052 | 36,837,286 | 90,104,291 | − 59 |
| C. St. P. M. & O. | 5,239,242 | 4,747,915 | + 10 | 11,333,356 | 10,959,690 | 6,885,679 | 5,815,763 | 4,447,677 | 5,143,927 | − 14 |
| D. & H. | 8,974,496 | 5,706,742 | + 57 | 18,518,504 | 14,666,761 | 8,972,353 | 8,134,265 | 9,546,151 | 6,532,496 | + 46 |
| D. L. & W. | 12,921,377 | 12,638,791 | + 2 | 28,950,265 | 26,649,186 | 15,388,731 | 11,663,586 | 13,561,534 | 14,985,600 | − 10 |
| D. & R. G. W. | 18,862,774 | 21,441,512 | − 12 | 38,034,097 | 40,319,903 | 23,351,319 | 20,353,741 | 14,682,778 | 19,966,162 | − 26 |
| D. M. & I. R. | 13,708,387 | 25,797,284 | − 47 | 21,331,586 | 31,642,951 | 16,011,310 | 14,472,937 | 5,320,276 | 17,170,014 | − 69 |
| E. J. & E. | 15,741,377 | 19,539,898 | − 20 | 20,799,889 | 24,271,419 | 16,165,011 | 13,145,794 | 4,634,878 | 11,125,625 | − 58 |
| Erie | 37,141,813 | 28,839,017 | + 29 | 62,972,861 | 52,504,404 | 36,246,637 | 31,266,250 | 26,726,224 | 21,238,184 | + 26 |
| G. T. W. | 2,051,398 | 1,129,249 | + 82 | 11,231,658 | 9,043,367 | 9,186,916 | 8,372,986 | 2,044,742 | 670,381 | +205 |
| G. N. | 51,106,590 | 51,224,532 | − .3 | 92,469,819 | 89,561,538 | 52,144,611 | 50,398,177 | 40,325,208 | 39,163,361 | + 3 |
| G. M. & O. | 11,418,027 | 11,947,438 | − 5 | 30,513,524 | 27,163,206 | 19,511,593 | 15,233,870 | 11,001,931 | 11,929,336 | − 8 |
| I. C. | 75,789,111 | 69,659,214 | + 9 | 117,796,635 | 105,033,384 | 75,071,432 | 68,402,378 | 42,725,203 | 36,631,006 | + 17 |
| L. V. | 13,134,785 | 10,465,885 | + 25 | 26,660,189 | 23,858,147 | 11,505,740 | 11,660,154 | 15,154,449 | 12,197,993 | + 24 |
| L. I. | 4,923,234 | 4,322,275 | + 14 | 14,412,936 | 13,224,464 | 17,621,047 | 11,901,597 | −3,208,111 | 1,322,867 | † |
| L. & N. | 67,219,963 | 42,085,723 | + 60 | 109,149,945 | 77,880,316 | 37,509,848 | 33,850,543 | 71,640,097 | 44,029,773 | + 63 |
| M. St. P. & S. Ste. M. | 13,389,678 | 12,293,963 | + 9 | 21,209,273 | 19,221,392 | 10,018,836 | 8,582,005 | 11,190,437 | 10,639,387 | + 5 |
| M.-K.-T. | 11,790,932 | 9,388,959 | + 25 | 25,300,755 | 20,085,396 | 19,160,876 | 16,021,335 | 6,139,879 | 4,064,061 | + 51 |
| M. P. | 62,116,284 | 56,560,418 | + 10 | 101,724,208 | 89,603,655 | 38,477,271 | 33,390,499 | 63,246,937 | 56,213,156 | + 13 |
| N. Y. C. | 67,989,791 | 102,238,515 | − 43 | 186,861,886 | 206,023,493 | 127,816,098 | 135,629,003 | 59,045,788 | 70,394,490 | − 16 |
| N. Y. C. & St. L. | 11,955,324 | 9,520,783 | + 26 | 30,692,372 | 25,633,895 | 23,192,387 | 19,345,333 | 7,499,985 | 6,288,562 | + 19 |
| N. Y. N. H. & H. | 24,863,264 | 44,804,714 | − 45 | 52,489,838 | 79,303,206 | 33,757,120 | 29,005,855 | 18,732,718 | 50,297,351 | − 63 |
| N. & W. | 52,067,424 | 56,763,569 | − 8 | 94,139,108 | 93,196,960 | 43,041,760 | 43,750,400 | 51,097,348 | 49,446,560 | + 3 |
| N. P. | 32,777,541 | 36,018,819 | − 9 | 72,586,882 | 72,249,865 | 30,178,966 | 28,990,636 | 42,407,916 | 43,259,229 | − 2 |
| P. R. R. | 171,038,587 | 106,536,272 | + 60 | 332,411,525 | 241,682,652 | 196,566,116 | 166,017,380 | 135,845,409 | 75,665,272 | + 79 |
| P. & L. E. | 13,917,812 | 15,384,429 | − 10 | 21,242,821 | 21,524,004 | 14,468,901 | 10,698,141 | 6,773,920 | 10,825,863 | − 38 |
| Reading | 17,345,450 | 20,341,605 | − 15 | 37,765,440 | 39,383,212 | 29,868,136 | 28,516,586 | 7,897,304 | 10,866,627 | − 27 |
| St. L.-San Francisco | 41,674,704 | 41,368,114 | + 1 | 60,159,144 | 57,672,700 | 25,293,956 | 21,939,146 | 34,865,188 | 35,733,554 | − 3 |
| St. L. Southwestern | 13,769,170 | 10,399,812 | + 32 | 25,502,320 | 20,547,136 | 14,811,429 | 11,148,139 | 10,690,891 | 9,398,997 | + 14 |
| S. A. L. | 24,097,218 | 25,228,286 | − 5 | 47,850,388 | 44,746,429 | 25,256,783 | 18,006,684 | 22,593,605 | 26,659,741 | − 15 |
| Southern | 60,863,198 | 54,148,311 | + 12 | 98,351,378 | 86,228,027 | 54,011,106 | 45,431,315 | 44,340,272 | 40,796,712 | + 9 |
| S. P. System | 111,248,971 | 125,675,533 | − 12 | 215,727,251 | 225,795,903 | 115,053,046 | 116,347,219 | 100,674,205 | 109,448,684 | − 8 |
| T. & P. | 13,424,783 | 15,081,911 | − 11 | 29,972,605 | 26,932,958 | 15,044,976 | 10,979,294 | 14,927,629 | 15,953,664 | − 7 |
| U. P. | 120,698,045 | 131,446,463 | − 8 | 211,138,781 | 209,771,004 | 114,279,662 | 99,787,655 | 96,859,119 | 109,983,349 | − 12 |
| Wabash | 30,364,770 | 25,402,948 | + 20 | 45,267,590 | 38,742,791 | 28,143,312 | 24,044,794 | 17,124,278 | 14,697,997 | + 17 |

*Certain capital and other reserve funds, particularly of roads recently reorganized, are not included.
† Current liabilities exceeded current assets in 1948.
§ Includes the Pere Marquette.

rates." It predicted, "Our railroads will find it increasingly difficult, if not impossible, to obtain new capital funds or refinance maturities by the issuance of non-fixed interest bearing securities such as income bonds, or by preferred and common stock issues. This is a sad commentary on their poor credit position despite maximum volume of traffic. . . . Failing a more constructive attitude on the part of the regulatory authorities, any sustained business depression would bring about serious difficulties for the railroads. The situation should be currently and permanently corrected to the end that this great industry, which has proven itself to be one of our first lines of defense, should not be placed in financial danger through no fault of its own making."

From time to time some malicious or uninformed person publicly refers to the railroads as a decadent industry. The pages of this issue of *Railway Age* are full of facts that show the railroads are not decadent—yet. They perhaps may be accused with more fairness, however, of having been less aggressive than they should have been in demanding concrete recognition for their fundamental importance to the national economy and the national defense — recognition that could be translated into means with which to accomplish at a much faster pace the modernization and improvement of their properties.

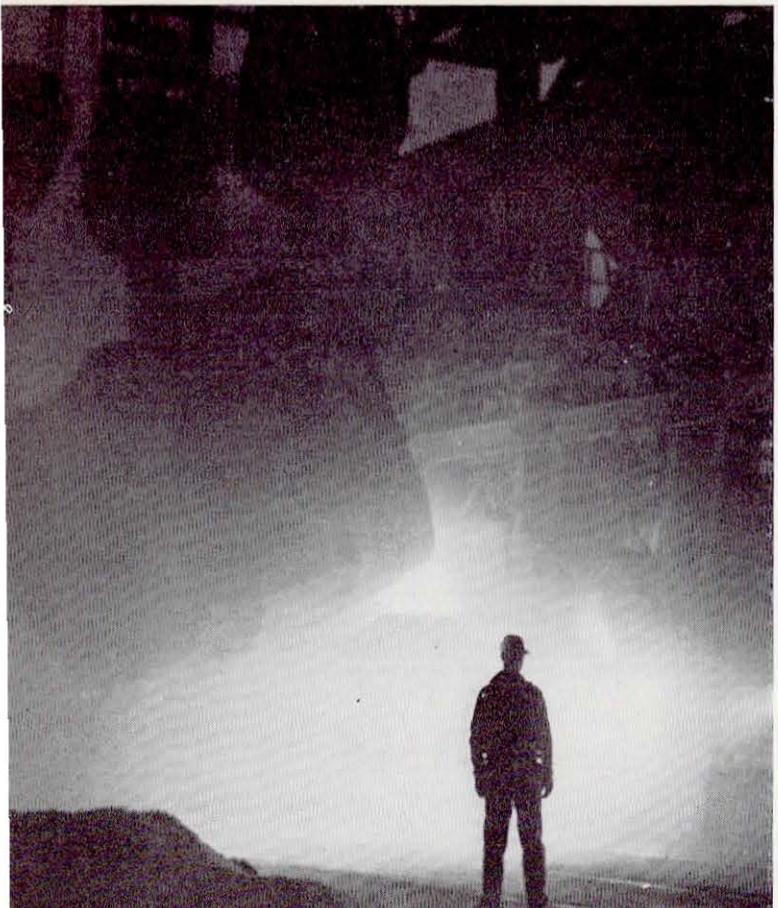
In brief, the railroads face a dilemma, and the national welfare and national defense very possibly may depend on their success in finding a way out of that dilemma. They cannot do it unaided. On the other hand, aid is not likely to be forthcoming until it is earnestly sought, until those who must give it are convinced that it is in their own interest to have better railroads. Great expenditures cannot be made by private enterprise in a time of great depression. They must be undertaken when business is good. The railroads cannot afford to wait. The railroads' managements, their security holders, their employees, their customers, the manufacturers of railway supplies, the government agencies that regulate the railroads and tax them, the armed forces of the country — all of them have a stake in the railroads' future. Together, they can convince the public that the national need requires prompt improvement and expansion of the railroads' facilities. If the public becomes convinced of the necessity, the means to accomplish it will be provided.



Except for the finest finished grades, the supply of lumber has increased greatly and prices have decreased

# MATERIALS SUPPLY IMPROVED IN '48

***Crosstie situation in Pacific Northwest was bad due to export of Douglas fir ties — Continuation of "voluntary allocations" of steel should keep carbuilding at present level well into '49 — Diesel fuel supply good***



Charging 100 tons of molten iron from blast furnaces into an open hearth for conversion into steel. Steel supply improved in 1948, but shortages still bedevil railroads

By J. W. MILLIKEN
Associate Editor, Purchases & Stores Department

While the railroads still are not getting everything they need, and prices reflect continuing inflation, the materials supply situation was eased considerably in the year just past, and in the categories which were causing most concern in the purchasing departments, namely, Diesel fuel, lumber, crossties, and to a certain extent steel.

Diesel fuel gave the railroads many anxious moments during the tough winter months early in 1948. No instance of storage of Diesel power for any period

was reported, however, and present prospects point to pretty clear sailing this year. Most roads report a normal fuel supply on hand, which varies from a 10-12 day reserve for some roads to as high as 44 days for others. Most of those with low supply expect to remedy this with increased storage capacity within the next 60-90 days. None expect trouble from this quarter during 1949.

The crosstie and lumber situation, which last summer was making most purchasing agents unhappy, seems to have improved somewhat, although neither uniformly nor nearly as much as would be desirable. Tie production, which started out at a low figure this year, climbed during the summer months but is slumping again, especially in the Central South and Southwest, where it was only about 50 per cent normal during November. Nevertheless, the roads in that area do not exhibit alarm. Although they do not have their full 1949 supply on hand, this is not unusual, since they use soft pine and gum ties which require only 7 or 8 months for curing. Despite a real improvement in the supply of Douglas fir ties, however, due partly to the West Coast maritime strike's cutting exports, those roads which rely on the Douglas fir area for their crosstie supply still are not out of the woods. Several of the larger ones report that their supplies on hand are sufficient only for the first six months of the year. With an expected boom in export shipments of ties now that the strike is over the prospect is still clouded for the roads that rely on Douglas fir. But in the East the tie supply seems to be much better, and several roads report that they are buying their 1950 ties already. Some eastern railroads may be a little short of ties, due to the production drop in the fall, but their shortage does not seem to be serious.

### Lumber Prices Down

Lumber for car repairs and other miscellaneous grades now seems almost universally back in the buyers' market category. In addition, prices have dropped considerably from the March and April figures. Both availability and price declines can be attributed to a slackening of the market for building material, plus, in the case of the West Coast area, a real decline in exports. It is noteworthy that some roads have specified the new lower prices as their delivered price, which makes the picture even more favorable in the light of freight rate increases. Only the finer finished grades of lumber continue to be really difficult to procure.

While the tie and lumber picture seems to have cleared favorably, in general, the supply of steel products presents a situation which is neither uniformly bad nor good. The six-month extension of the "voluntary allocations" of steel, amounting to 250,000 tons per month, for carbuilding and M.R.O. indicates that at least until the end of August, 1949, the car repair and building program probably will go on at a rate closely approximating the present one.

When roads are experiencing difficulty in obtaining their needs for various sheets and plates for the carbuilding and repair programs, it seems to be neither a question of distance from mills nor of size of orders, which would seem to indicate a real desire on the part of the steel industry to treat customers uniformly. By and large, there is little doubt that the demand for most steel products is still running ahead of the supply despite indications that 1948 steel production will be greater than that of any other year in history. That the steel companies are meeting demands as rapidly as possible is certain. Most of the railroads queried report they are "getting by" although in some cases they have had to resort to buying from warehouses and second-hand dealers, while one railroad reports that dismantling of steam locomotive tenders has helped its car repair program. In cases where the railroads have been forced to buy from warehouses they have paid more than if they bought direct from the mill. Generally speaking, however, roads are experiencing little difficulty in getting mills to accept orders, although lead time allowed on orders varies as to mill and items ordered.

### Steel Delivery Times Vary

So far as the steel supply's effect on carbuilding (by railroads) and M.R.O. is concerned, a representative group of seven roads, covering all sections of the country, reports as follows: Three holding to schedule on M.R.O. and building; one program "not operating at capacity"; one program 30 days behind; two programs about 180 days behind. It seems clear, therefore, that there is no one word, unless it be "tight," which can describe the situation as regards sheets and plates. Certainly the railroads are not getting all they want, when they want it, but in this position they have much company. That railroad men know this is indicated by the fact that practically no one is bitterly critical of the steel industry, and others expect to get "caught up" in their repair program fairly soon. Delivery times range from 45 days to 180 days in a few cases and even longer when steel mill breakdowns occur. Most roads reporting say they are in the 60-90 day group, with the average overall being about 70. This is a definite improvement over a year ago.

While some of the large steam-power users are having some trouble meeting their needs for boiler tubes and flues, one road even reporting it will not receive more than 50 per cent of actual needs during the first quarter of 1949, most of them report getting by because Dieselization is cutting their overall needs and giving them a supply of second-hand tubes and flues from scrapped steam locomotives. Unless they do a little better in this respect by the second quarter of this year some steam power may be "stored awaiting repairs." Canadian roads are particularly disturbed about the flue and tube situation.

Various other items are still on the shortage list. Electrical equipment, particularly that requiring copper, which is in great demand, is on slow delivery schedules. This means that special attention must be given to the need for some of the electrical equipment on Diesels and signal and communications material. Cement, tinware and aluminum also are still decidedly in the seller's market. Delivery times on material-handling equipment and lead have decreased considerably. Clearly, the supply situation is getting better —not at uniform rates for all commodities, but improving. Unless something unforeseen happens, 1949 should see further favorable developments.

# WAGE AND RULE MERRY-GO-ROUND

***Year of strike threats, government seizure and compromise settlements begins and ends with claims for higher wages and additional working rule concessions***

By R. G. LEWIS
Associate Editor

Labor relations were such during 1948 that members of the carriers' conference committees at Chicago hardly ever had a chance to "pack up and go home" for more than a weekend. These unsettled conditions were climaxed on May 10 by government seizure of the railroads in an eleventh-hour measure to prevent a strike of 125,000 employees represented by the Brotherhood of Locomotive Engineers, the Brotherhood of Locomotive Firemen and Enginemen and the Switchmen's Union of North America. Army operation lasted until July 9. On August 11, the three unions accepted terms conforming generally to recommendations made by an emergency board four and a half months earlier. The settlement provided for a 15½-cent hourly wage increase retroactive to November 1, 1947, and rule changes retroactive, so far as money provisions were involved, to January 1, 1948.

A 15½-cent wage increase had been accepted by 175,000 other operating employees effective on November 1, 1947, along with four rule changes effective on January 1, 1948. Nearly a million non-operating employees were awarded 15½-cents more hourly, effective September 1, 1947, by an arbitration board. Thus the 15½-cent pattern—while not agreed upon by the engineers, firemen and switchmen until August, 1948, was actually applied to the entire railroad industry in late 1947, and constituted the second general pay increase since "V-J" Day.

Negotiations got under way on "third round" demands even before these settlements were arrived at, and further increases were agreed upon for the operating brotherhoods. The "non-op" case was still unsettled at the year end. A complete review of these developments appears in the article by Dr. Parmelee in this issue, and in the "calendar" on the next page.

## Payroll Biggest Expense Item

In the first nine months of 1948, approximately 64 per cent of the Class I railroads' total operating expense was in the form of compensation to employees—$3,439,836,788 out of expenses totalling $5,533,431,411. This nine-month payroll was more than a quarter of a billion dollars greater than that for the first nine months of 1947, even though two per cent fewer employees drew pay thereon. It did not, of course, reflect the 10-cent settlement with the operating employees on October 16.

During the first nine months of 1948, the average railroad employee earned $287.93 monthly. (This, again, was prior to the 10-cent settlement with the operating brotherhoods.) In the first nine months of the year previous, average monthly earnings were $260.59, so that workers' earnings in the first three quarters of 1948 were up 10.5 per cent.

By June, 1948, when third-round increases were in effect in many manufacturing industries, and when only first-and second-round increases had taken effect in the railroad industry, average weekly earnings of the two classes, compared with their earnings in September, 1945—the month following "V-J" Day—were as follows:

| | Manufacturing Industry | Railroad Industry |
|---|---|---|
| September, 1945 | $40.87 | $49.80 |
| June, 1948 | 52.85 | 67.71 |

The take-home pay of the railroaders was better preserved than the take-home pay of most industrial workers because railroad men did not suffer any great reduction in the number of hours worked.

The productivity of railroad employees in terms of traffic units, car-miles and gross ton-miles produced does not show material change when the year ended June 30, 1948, is compared with the year 1947, but the cost of wages for that production rose as much as 12 per cent. The following measures of employee productivity, and the wages paid therefor, show that the carriers had to pay more for approximately the same operating results:

| | Year 1947 | Year ended June 30, 1948 | Percent increase or decrease |
|---|---|---|---|
| Traffic units* per employee | 552,213 | 548,278 | D 0.7 |
| Wages per 1,000 traffic units | $5.83 | $6.66 | I 1.4 |
| Car-miles per employee | 27,099 | 27,111 | ... |
| Wages per car-mile | 11.9¢ | 13.3¢ | I 11.8 |
| Gross ton-miles per employee | 1,286,791 | 1,286,931 | ... |
| Wages per 1,000 gross ton-miles | $2.50 | $2.80 | I 12.0 |

*One traffic unit is equal to one freight ton-mile or two passenger-miles.

In view of the favorable earnings enjoyed by railroad employees, it might be anticipated that 1949 would be a year of freedom from new demands, and a year in which the railways might, at last, enjoy stabilization of costs. However, if the unions continue to press demands for make-work rules—such as those which would, if granted, put extra engineers and firemen in the cabs of Diesel locomotives—1949 will offer the same pattern of labor unrest and continued cost increases as did 1948.

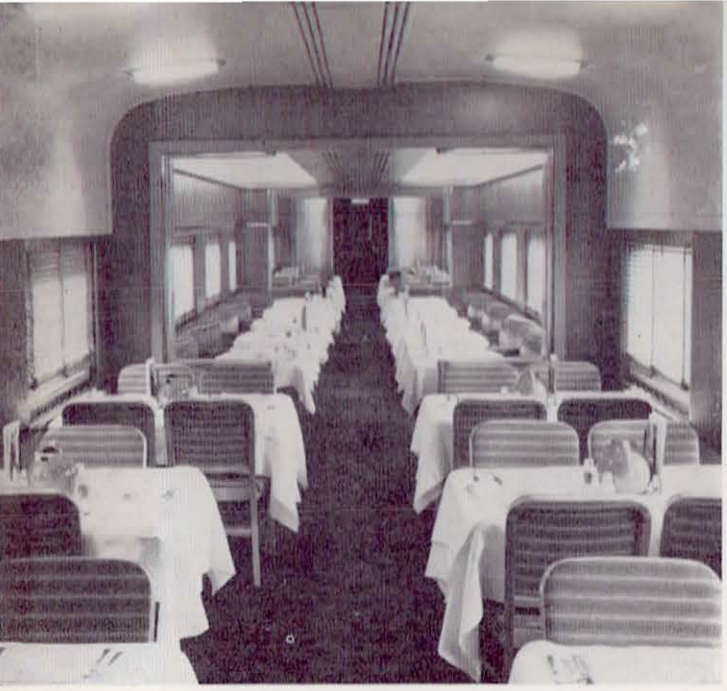
The accompanying "calendar" reviews the labor situation from the first of last year; carries through the wage and rule dispute which led to the 61-day period of federal operation; reviews the case of the non-operating employees, and outlines demands and recommendations which were before the carriers at the close of the year.

## CALENDAR OF LABOR AND WAGE EVENTS—1948

**(At the beginning of 1948 the major matter on the wage and rule dockets of the nation's railroads was the unsettled demand of approximately 125,000 engineers, firemen and switchmen for a 30 per cent increase in pay and changes in 25 working rules. There was also pending a demand of the Brotherhood of Locomotive Firemen & Enginemen for an extra fireman on Diesel locomotives in road service, and elimination of oil-fired steam, electric and Diesel pay differentials.)**

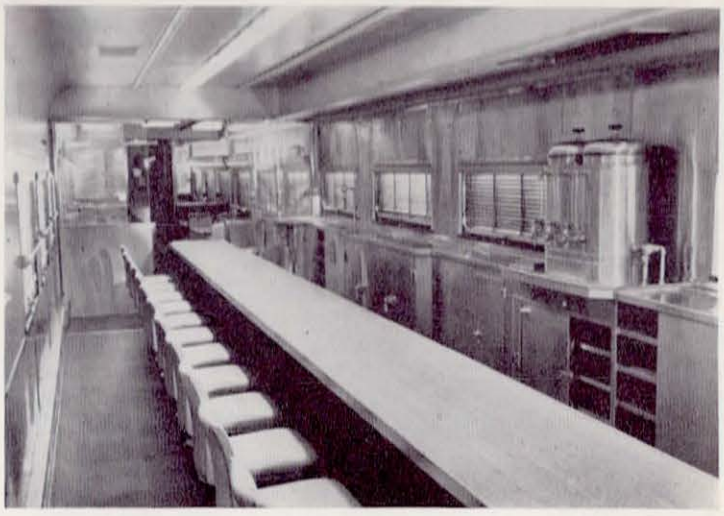
| | |
|---|---|
| **Jan. 1** | Rule changes effecting passenger service overtime, initial terminal delay provision in freight service (engineers and firemen only), conversion to local freight basis of pay, away from home terminal pay, differentials, and rates of pay for yard service employees, placed in effect as a result of conductors' and trainmen's settlement of Nov. 14, 1947, and, retroactively, the engineers', firemen's and switchmen's agreement of Aug. 11, 1948 |
| **Jan. 16** | National Mediation Board announces failure of its conciliatory efforts in the dispute over demands of the engineers, firemen and switchmen |
| **Jan. 20** | Engineers, firemen and switchmen set strike for 6 a.m. Feb. 1 |
| **Jan. 27** | President Truman creates emergency board to handle engineers', firemen's and switchmen's dispute; appoints Dr. Wm. M. Leiserson, chairman; Judge Geo. E. Bushnell and Prof. W. W. Wirtz, members |
| **Feb. 1** | Rule change respecting overtime payments to extra conductors and trainmen in yard service placed in effect as a result of Dec. 12, 1947, agreement |
| **Feb. 2 to March 10** | Emergency board proceedings in engineers', firemen's and switchmen's case open at Chicago. (Thirty-day extension requested Feb. 21) |
| **March 1** | Rule changes covering dining car stewards are placed in effect as a result of Dec. 18, 1947, agreement |
| **March 27** | Emergency board recommends 15½-cent hourly wage increase and 15 rule changes — 13 employee proposals and 2 carrier proposals — in engineers', firemen's and switchmen's dispute |
| **March 29** | Carriers accept emergency board recommendations |
| **April 6** | Unions reject emergency board recommendations |
| **April 10** | Non-operating employees ask for 40-hr. work week with 48 hours' pay; penalty pay for Saturday, Sunday and holiday work, and a 25-cent hourly wage increase, to be effective May 10 |
| **April 14 to April 27** | Engineers, firemen and switchmen meet with carriers to further negotiate their wage and rule dispute in the light of the emergency board's March 27 findings |
| **April 28** | Firemen and switchmen announce strike set for 6 a.m. May 11 |
| **April 29** | Engineers announce strike set for 6 a.m. May 11 |
| **April 29 to May 4** | National Mediation Board renews conciliatory efforts; no accord reached |
| **May 7** | Union heads meet Dr. John R. Steelman, assistant to President Truman, in attempt to reach settlement |
| **May 8** | Carriers and unions confer jointly with Steelman |
| **May 9** | Carriers and unions confer separately with Steelman |
| **May 10** | Government takes over railroads upon authority of the Federal Possession and Control Act of 1916 authorizing the President to so act in "time of war." Secretary of the Army Royall charged with operation of the roads. Temporary restraining order obtained from Judge T. Alan Goldsborough and strike called off in compliance therewith |
| **May 18 to May 21** | Further White House conferences fail to bring settlement; temporary restraining order extended to May 29 |
| **May 28** | Judge Goldsborough extends temporary restraining order to June 11 |
| **May 28 to June 2** | Dr. Steelman further attempts, without success, to mediate the dispute by separate meetings with the parties |
| **June 10** | Judge Goldsborough grants a federal government petition for a preliminary injunction replacing the temporary restraining order, restraining the unions from staging a strike |
| **June 23 to June 28** | Steelman further attempts to settle case in negotiation with the separate parties |
| **June 29 to June 30** | Carriers and unions confer jointly with Steelman |
| **July 1** | Judge Goldsborough makes permanent the injunction restraining the unions from strike action |
| **July 1** | Conductors and trainmen file request for a 25 per cent (third-round) wage increase |
| **July 7** | Steelman resumes conferences with the carriers and the engineers, firemen and switchmen |
| **July 8** | A settlement proposal on approximately the same basis as the March 27 emergency board recommendation, except as to some rule provisions, accepted by both parties |
| **July 9** | Government control terminated and roads returned to owners |
| **Aug. 11** | Agreement for settlement of all engineers', firemen's and switchmen's issues in the national wage and rules case signed at Washington; includes provision for immediate negotiation on the difference between 15½-cents hourly and the original 30 per cent wage demand (about 18 per cent) |
| **Sep. 8** | Non-operating unions begin negotiations with carriers at Chicago |
| **Sep. 14** | Operating employees begin meetings at Chicago on "third-round" wage demands |
| **Sep. 17** | "Non-op" negotiations collapse |
| **Sep. 18** | "Non-op" unions circulate strike ballots |
| **Sep. 20** | Carriers seek Mediation Board intervention in "non-op" case |
| **Sep. 23 to Oct. 6** | Mediation Board meets with carriers and "non-ops"; conciliatory efforts of no avail. Unions reject arbitration offer |
| **Oct. 4** | Conductors and trainmen settle for 10-cent hourly wage increase, effective Oct. 16, in place of 25 per cent demands |
| **Oct. 5** | Engineers, firemen and switchmen recess sessions with carriers to consider 10-cent offer in place of 18 per cent demands |
| **Oct. 16** | Ten-cent hourly wage increase placed in effect for approximately 300,000 operating employees as a result of conductors' and trainmen's agreement of Oct. 4, and, retroactively, the engineers', firemen's and switchmen's settlement of Nov. 12 |
| **Oct. 18** | President creates "non-op" emergency board; appoints Dr. Leiserson, chairman; Geo. A. Cook and David L. Cole, members |
| **Oct. 26 to Nov. 27** | "Non-op" emergency board meets at Chicago (thirty-day extension granted on Nov. 16) |
| **Nov. 12** | Engineers, firemen and switchmen accept 10-cent hourly wage increase offer, retroactive to Oct. 16 |
| **Nov. 18** | Conductors and trainmen file demands for 15 to 30 days' paid vacations based on length of service |
| **Nov. 27** | Brotherhood of Locomotive Engineers circulates strike ballots on 18 western roads for second engineer on multiple-unit road Diesel locomotives |
| **Nov. 30** | Engineers, firemen and switchmen file demands for 15 to 30 days' paid vacations based on length of service |
| **Dec. 17** | "Non-op" emergency board recommends carriers establish a 40-hr. work week consisting of 5 days of 8 hr. each, with 2 consecutive days off in each 7, with a 20 per cent increase in the basic rate of pay to provide the same basic earnings in 40 hr. as are now paid for 48 hr., and time and one-half for all overtime work, effective September 1, 1949, and, in addition, a general increase of 7 cents an hour retroactive to October 1, 1948 |

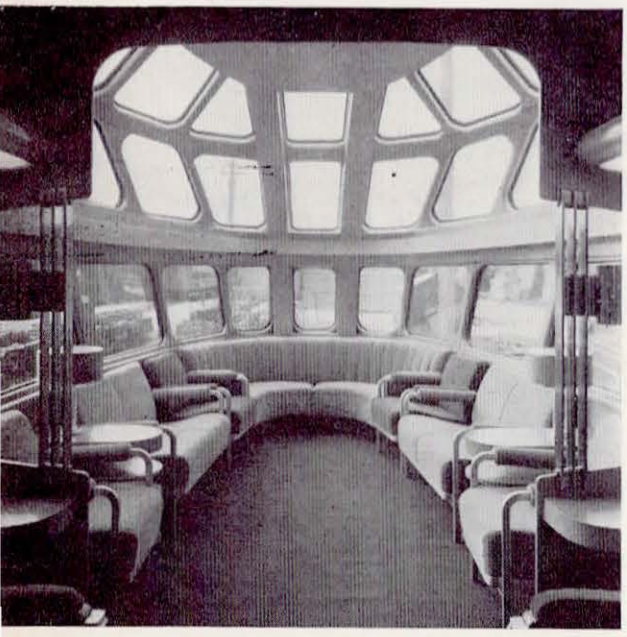
**(At the close of 1948, the railroads had before them proposals of the B. of L. F. & E. for extra firemen on road Diesels; a proposal, coupled with a strike threat on 18 roads, of the B. of L. E. for an extra engineer on multiple-unit road Diesels; a proposal of the five operating unions for longer vacations; and the recommendations of an emergency board that a 40 hr. week with 48 hr. pay, and a general increase of 7 cents hourly, be awarded to the non-operating employees.)**



Above—A variety of seating arrangements is available in the 64-passenger full-length diner delivered to the New York Central by the Budd Company

Below—Combination lunch-counter and table service meets the different needs and tastes of the patrons of this car built by the Budd Company for the Atchison, Topeka & Santa Fe



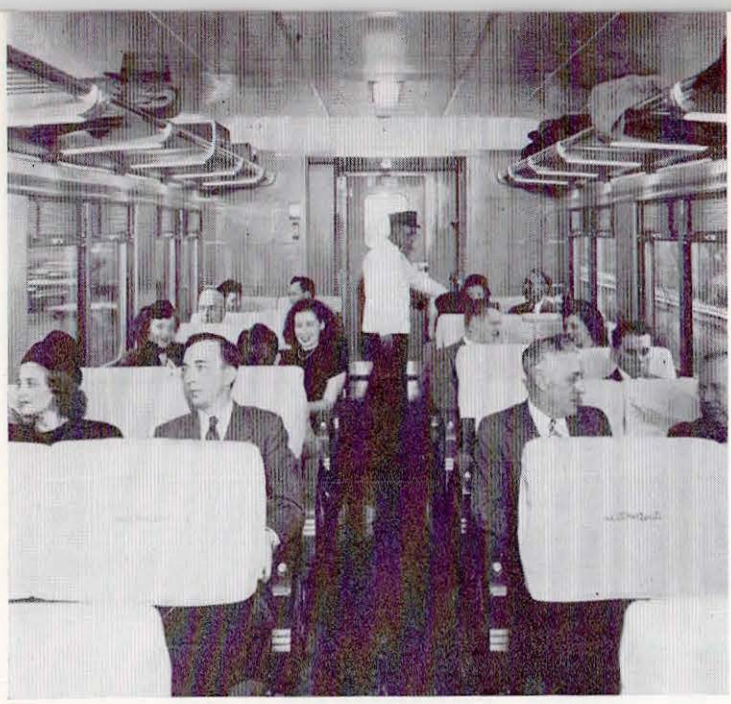


# VARIETY IN FOOD AND LOUNGE FACILITIES

Left—An unusual end-structure gives the passengers greater visibility from the Sky-Top observation lounge car, built by the Chicago, Milwaukee, St. Paul & Pacific in its Milwaukee shops for the Chicago-Twin Cities "Hiawathas"

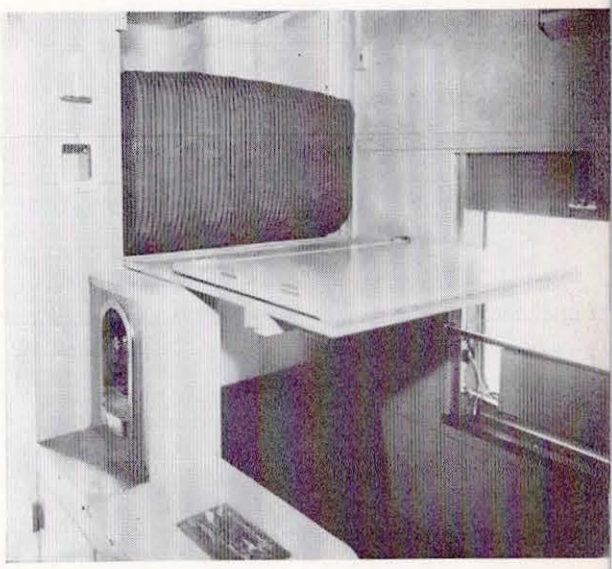
Below left—The playroom in the recreation car built by the American Car & Foundry Co. for "The Jeffersonian" of the Pennsylvania is typical of the attention being paid to the comfort and pleasure of overnight coach passengers

Below right—A three-dimensional offset in the wall breaks the visual monotony in the 48-passenger diners of the new Chicago-Twin Cities "Hiawathas," built by the Chicago, Milwaukee, St. Paul & Pacific in its Milwaukee shops



Above left—Modern coaches are attractive and comfortable. This car was built for the Gulf, Mobile & Ohio by the American Car & Foundry Co. Above right—Variety marks the arrangements provided for food service. One of seven lounge-grill coa hes built for the Missouri Pacific and the Texas & Pacific by the American Car & Foundry Co. The lounge section seats 44 passengers. Nine passengers can be served refreshments and light meals in the grill

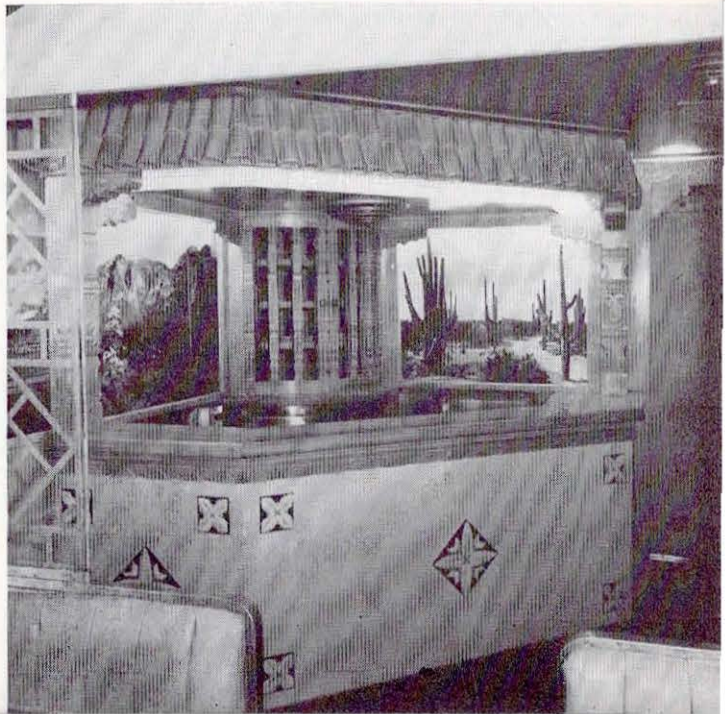
# FEATURED 1948 PASSENGER TRAINS



Right—Train accommodations for employees were not overlooked. The porter's section in a sleeping car built by the Pullman-Standard Car Manufacturing Company for the Atchison, Topeka & Santa Fe

Below left—Comfort and utility are furnished by the baggage-parlor-lounge cars of the New York, New Haven & Hartford. Built by the Pullman-Standard Car Manufacturing Company

Below right—The bar of the Fiesta lounge car in the Chicago, Rock Island & Pacific's "Rockets." Built by the Pullman-Standard Car Manufacturing Company



Several types of large-production tie-tamping units have been developed for large-scale out-of-face track surfacing

By NEAL D. HOWARD
Western Editor

# FAST-MOVING DEVELOPMENTS IN WORK EQUIPMENT

***1948 purchases characterized by continued high volume and trend toward larger units for mass-production work — High labor rates portend still more intensive mechanization in 1949***

Maintenance-of-way and structures work equipment was big business on the railroads in 1948. Never before was the total investment in such equipment as high as at the end of the year; never was there more universal acceptance of power tools and machines for doing roadway and structures work; and, influenced by a number of factors, especially mounting labor costs, never was the need for the intensive use of such equipment more compelling.

Continuing a trend that developed in the early Twenties and reached a peak during the recent war years, the purchase of power tools and machines for use by the maintenance-of-way forces again was large during the past 12 months. As a result of several unfavorable factors, purchases during the year, as represented by both number of units and total cost, were down slightly from 1947, but they were larger than in any year prior to 1944.

## Again a Wide Variety

Based upon figures furnished to *Railway Age* by all but four of the more important roads of the United States, Canada and Mexico, it is estimated that all roads in these three countries ordered in 1948 a total of 9,300 units of power tools and machines of all kinds for roadway, track, bridge, building and water service work, and a wide range of miscellaneous operations, at a total estimated cost of approximately $18,700,000. This represents a reduction of 200 units, and about $400,000, from the purchases made of similar equipment in 1947.

Purchases in each of these two years compare with the purchase of 9,939 units in 1946, at an estimated cost of $15,400,000, and of 11,733 units in 1945, at an estimated cost of $17,500,000. Thus, while purchases, as represented by orders placed, did not quite hold their own in 1948, compared with 1947, and were down from the larger number of units purchased in both 1946 and 1945, they were larger in volume than in any earlier year except 1944, when the roads purchased 9,984 units at a total cost of approximately $14,400,000. However, the dollar volume of purchases of work equipment, reflecting increased costs, was never larger than during the last two years.

## Many Factors in 1948 Picture

Stimulated by higher wage rates, purchases of power tools and machines were larger in 1948 than they would have been otherwise, although there were many other factors that continued to influence large purchases of such equipment, including local shortages of labor, large maintenance programs, the need for maximum production and greater precision in many classes of work, and the constant desire to make maintenance operations safer and more attractive to available labor. But these influences toward larger purchases were offset to a large extent by the narrow margin of net earnings made by most roads, in spite of the continuing high volume of freight traffic and increases in both passenger and freight rates, and, also, by a number of other factors, one of the more important of which was

**Annual Expenditures for Maintenance-of-Way and Structures Work Equipment, 1937—1948**

| | *Units* | *Expenditure* |
|---|---|---|
| 1937 | 3,310 | $ 5,000,000 |
| 1938 | 1,376 | 2,000,000 |
| 1939 | 3,547 | 6,000,000 |
| 1940 | 5,414 | 7,250,000 |
| 1941 | 8,007 | 10,500,000 |
| 1942 | 7,612 | 10,270,000 |
| 1943 | 8,507 | 12,300,000 |
| 1944 | 9,984 | 14,400,000 |
| 1945 | 11,733 | 17,500,000 |
| 1946 | 9,939 | 15,400,000 |
| 1947 | 9,500 | 19,100,000 |
| 1948 | 9,300 | 18,700,000 |

the continuing shortage of steel, which restricted rail renewals and some types of structures work.

Noteworthy factors in the 1948 work equipment picture include the entry into the market for power tools and machines by a larger than usual number of the smaller roads and terminal companies; the leasing of certain types of roadway machines by the railroads from manufacturers; the practice of utilizing the services of well-equipped contractors in carrying out roadway maintenance programs, especially where local labor shortages were a factor; the trend toward the purchase and use of larger, more costly, and more highly productive units of equipment; greater appreciation of the adaptability of power tools and machines to the work of the bridge-and-building and section forces; and increased use of motor trucks by the maintenance-of-way and structures forces. Also in evidence was a greater interest in the use of tractor-bulldozers, equipped with winches, and other off-track machines, at derailments for clearing away wreckage and restoring the roadbed and track to service.

### *Need Will Continue Great in 1949*

Many factors, some of which cannot be evaluated accurately at the present time, will influence the volume of work equipment purchases in 1949, but the major factors are certain to be the general economic health of the country, railway earnings, and labor costs. Assuming the first two factors are favorable, it is certain that the demand for increased production and lower unit costs, which becomes more imperative with every increase in wage rates, will result in continuing large purchases of equipment. A continuing trend is also foreseen in the purchase of large-capacity, mass-production units, particularly where material-handling is involved, and in the use of off-track units for transporting men and equipment. Continued interest is also indicated in large-scale ballast cleaning and track surfacing work, stimulated by the new large-production units that came into the field during 1947-48.

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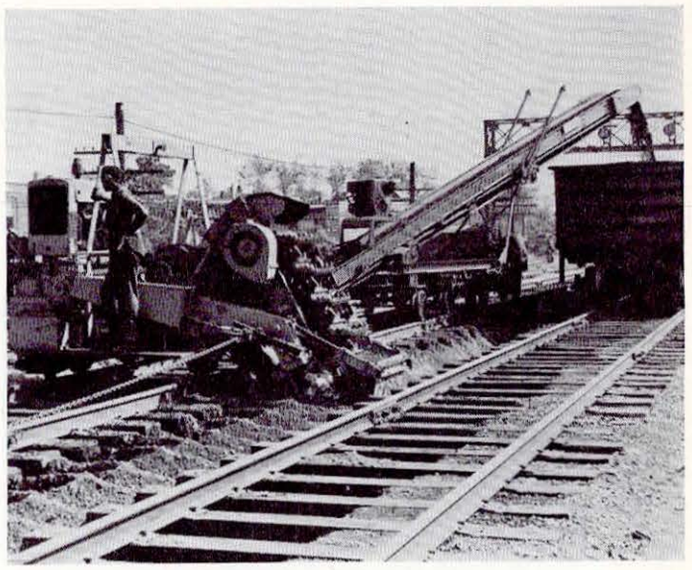

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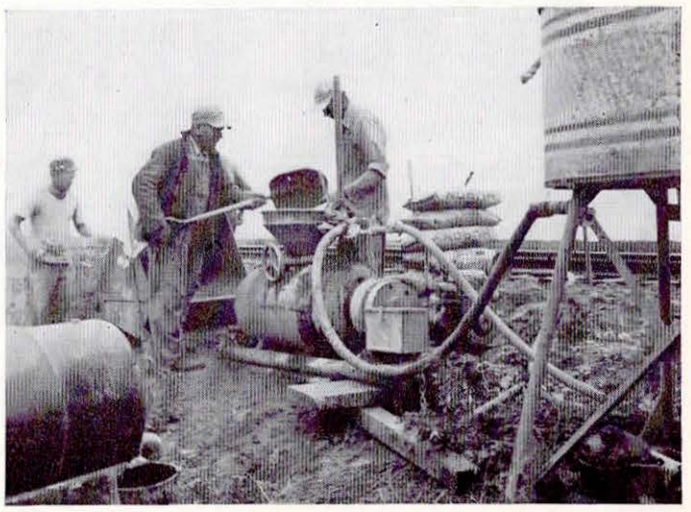

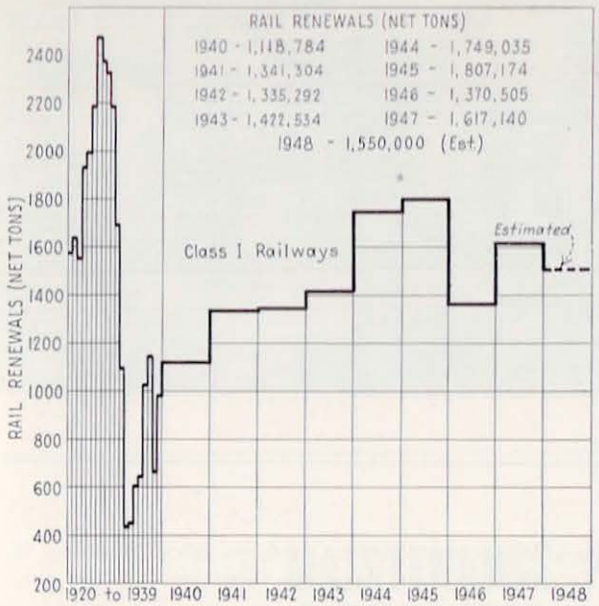


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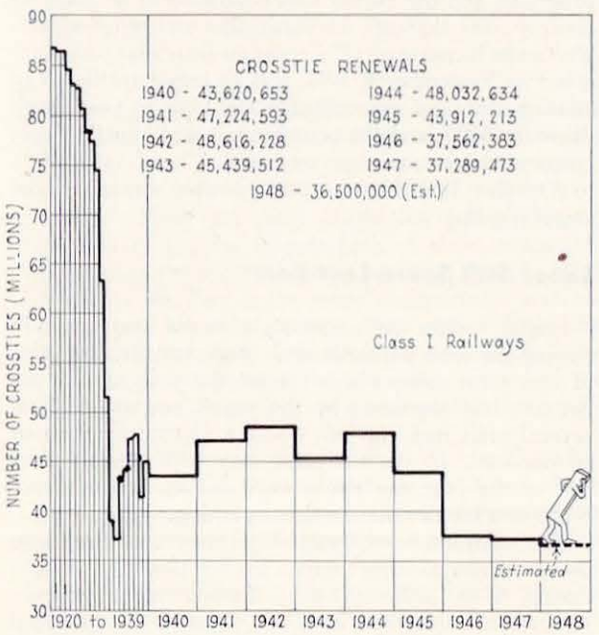


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A bright picture was presented by the construction activities of the railroads last year. According to figures assembled by the Interstate Commerce Commission, the gross capital expenditures of the Class I roads in 1948 for improvements to their fixed properties totaled $331,000,000. This outlay is $45,000,000, or 16 per cent, greater than the comparable expenditures for 1947. Also it stands out as being larger than any year since 1930. Even after allowance is made for increased costs as a factor in the upturn of expenditures for improvements there is little question that the actual volume of work accomplished in this field remained at a high level.

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the continuing shortage of steel, which restricted rail renewals and some types of structures work.

Noteworthy factors in the 1948 work equipment picture include the entry into the market for power tools and machines by a larger than usual number of the smaller roads and terminal companies; the leasing of certain types of roadway machines by the railroads from manufacturers; the practice of utilizing the services of well-equipped contractors in carrying out roadway maintenance programs, especially where local labor shortages were a factor; the trend toward the purchase and use of larger, more costly, and more highly productive units of equipment; greater appreciation of the adaptability of power tools and machines to the work of the bridge-and-building and section forces; and increased use of motor trucks by the maintenance-of-way and structures forces. Also in evidence was a greater interest in the use of tractor-bulldozers, equipped with winches, and other off-track machines, at derailments for clearing away wreckage and restoring the roadbed and track to service.

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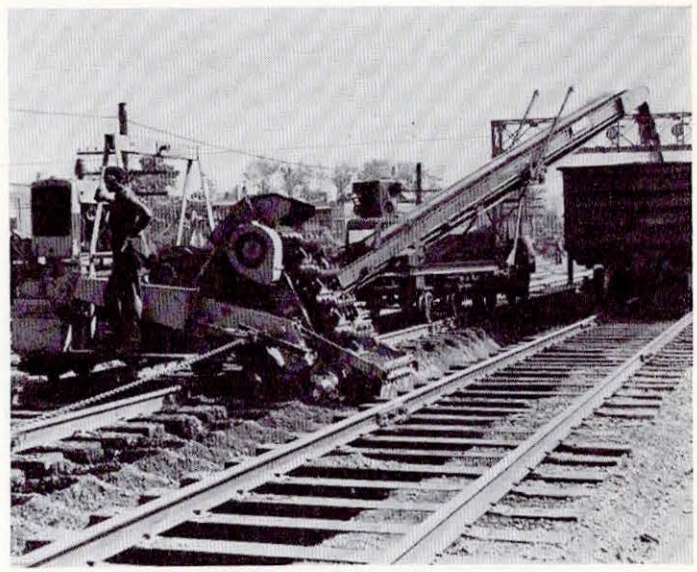

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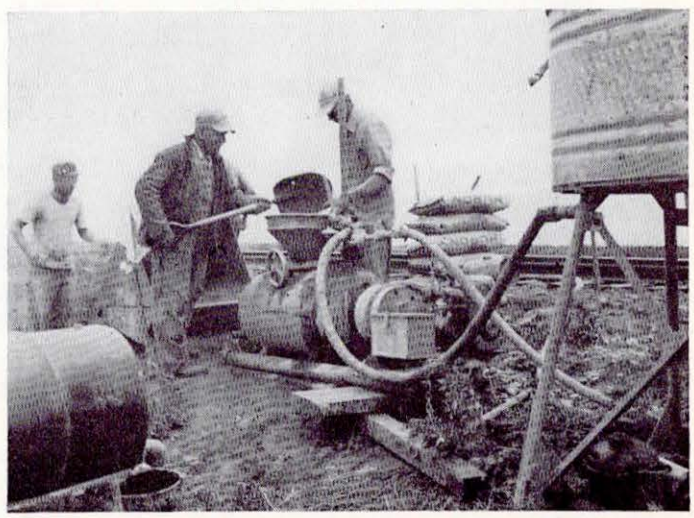


# MORE MECHANICAL HANDLING IN '48

***Last year saw decided advances — Many stores and stations departments adopt unit-load technique as a cost-cutting measure***

By J. W. MILLIKEN
Associate Editor, Purchases & Stores Department

Anyone surveying mechanized materials handling on the American railroads cannot help but be struck by the rapid strides in that field in the past two years, especially in the stations departments. The example of one large railroad with several hundred units of equipment is illustrative. This road has a large number of stations where mechanical handling equipment is available to handle palletized loads. Over 60 per cent of those stations have been so mechanized within the past two years, and about 51 per cent of the units of mechanized equipment (including equipment other than for handling pallets, but not including trailers for tractor-trailer trains) have been installed in this same period. Of the equipment most frequently used in freight-houses, including that for handling unit loads and burden carrying trucks but not tractors, more than 75 per cent has been installed in the past two years. Truly, the ideas of speedy operation and the unit load have "caught on" in its stations department.

During the year just closed 24 Class I railroads have installed in some 94 stations more than 110 fork trucks, more than 200 burden-carrying trucks, 21 tractors, 675 trailers, and many miscellaneous pieces of equipment, including gravity and powered conveyors, and thousands of pallets. With plans for 1949 still incomplete as this issue goes to press, these same roads are planning to mechanize newly or to a greater degree at least 72 stations. Present plans call for about 94 fork trucks,

Equipment for mechanical handling of supplies and revenue freight is going into storehouses and freight stations at an increasingly rapid rate as low net incomes make efficient low-cost handling more necessary than ever before

more than 100 burden-carrying platform trucks, 12 hand-hydraulic trucks, 10 motorized pallet trucks, 5 tractors, and about 600 four-wheel trailers. (No estimates of stores and mechanical department requirements are available.) Of the stations mechanized in 1948, at least 15 were newly built or required extensive repairs, while the 1949 program to date will necessitate repairs or new buildings at a minimum of 24 different locations. Wherever mechanizing is in process the the railroads have found it wise to "modernize, then mechanize."

### Containers and Lift Trucks Used

Many station men are trying hard to get their l.c.l. shippers to use the unit load method in shipping, so far with success only in isolated instances. A number of railroads have undertaken to compensate for their failure to receive more palletized loads by transporting l.c.l. in palletized or skidded containers. In some cases these are loaded, at stations, by the railroads themselves and sometimes the container is sent out on pick-up trucks to shippers who will load it. Handling savings are the result, as well as an almost complete elimination of loss and damage. Some railroads report that they can "containerize" up to 70 per cent of their l.c.l. freight. Several roads, not now users of these l.c.l. containers, plan to begin their use early this year.

In the New York harbor area, railroad lighterage agents and the general managers' committee are working with the steamship companies in an effort to set up a harbor pallet pool or some other method of making the interchange of export-import freight less expensive. There are many difficulties in the way, not the least of which has been the stevedore strike just ended.

While the stations departments have been making these rapid strides in increasing their mechanical handling facilities, the stores and mechanical departments have not been idle. The railroads' stores departments, always one of the nation's largest shippers and receivers of freight, have been for many years among the leading users of mechanical handling techniques in this country, barring no industry. At the Illinois Central's Paducah store, for instance, there has been no hand trucking, except for a few products of awkward shape or size, since the storehouse was built in 1927.

### Stores Department Practices

The use of skids and pallets in the stores departments is an old story, but many purchases and stores men are not satisfied that they have even scratched the surface in cutting the cost of handling materials. While a number of them have been shipping on pallets and skids from store to store, they feel that not until they receive their materials in unit loads—where it is possible to build unit loads—will they be able to achieve the maximum in cutting the cost of handling company material. Accordingly, many are specifying on purchase orders that unit loads be shipped and one road has a complete follow-up procedure to find out "why" if requests are not filled. Some of them have gone to the trouble and expense of going to the supplier's plant to try to show that supplier how the building and handling of unit loads will save him money and at the same time be beneficial to the railroad. At least one case is on record where the road has shipped its own fork truck to the manufacturer's plant to be used in the demonstration. Some stores departments have had some success in getting their materials shipped to them in unit loads, but generally speaking, where the load requires a pallet or skid they have had most success with on-line suppliers.

### Standardization Required

There are several reasons for the stores departments' inability fully to achieve their desires. Perhaps the main one is shipper inertia. For many shippers the unit-load handling and shipping principle would mean making expenditures of large sums of money for equipment and plant design changes. Another is the controversial question of rates on pallets. A third and extremely important one is the delay of the railroads in standardizing their demands on the supplier so that he in turn can standardize his handling system and equipment.

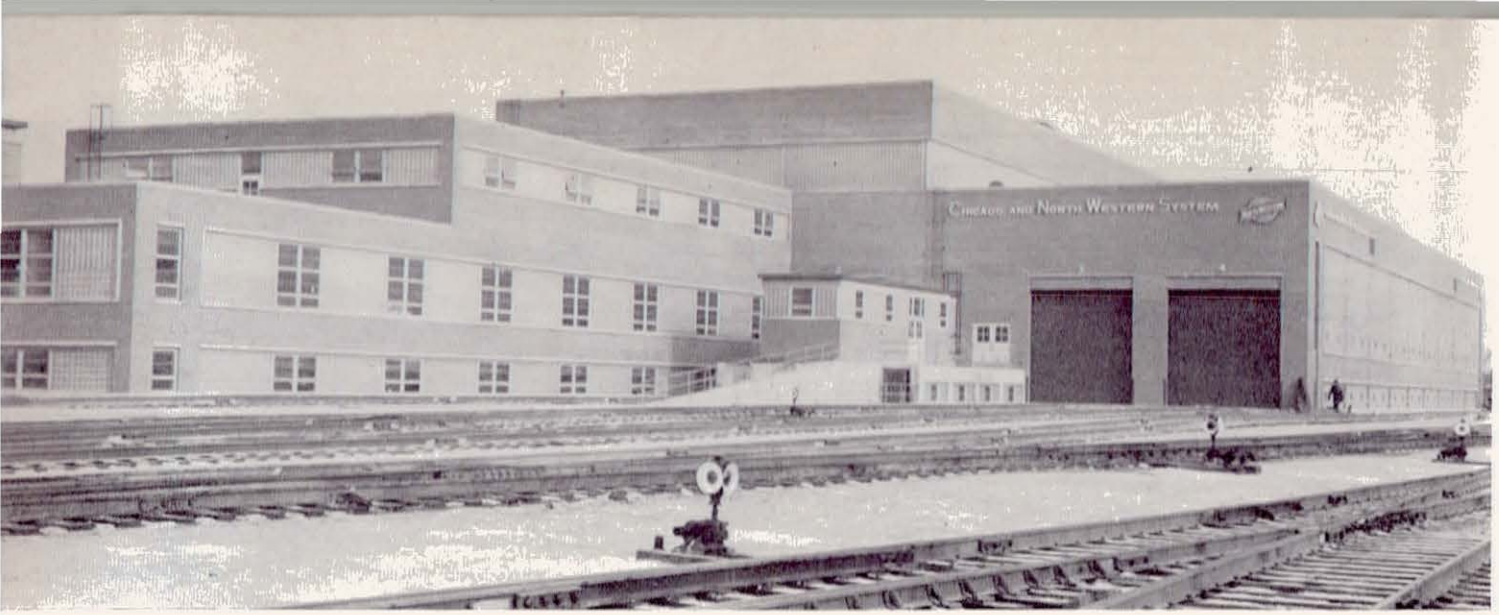
With these factors in mind, the 1948-1949 materials handling committee of the Purchases & Stores Division of the Association of American Railroads has appointed a subcommittee whose members will attempt to standardize railroad demands on suppliers and at the same time educate those suppliers in the use of the unit load. This committee's program includes visits to the suppliers' plants and visits by the suppliers to railroad storehouses so that the advantages can be demonstrated. Such a program, consistently advocated by *Railway Age*, is expected to achieve favorable and prompt results.

### Shops Are Material Handlers Too

The mechanical departments of the railroads also have found mechanized handling equipment useful. Witness the cases of the Norfolk & Western at its new rip track at Roanoke, Va., (see *Railway Age* of September 4, 1948, page 32) and the Baltimore & Ohio at its Glenwood (Pittsburgh) wheel shop (see *Railway Mechanical Engineer* of August, 1946, page 389). Within the shops themselves, of course, cranes and hoists long have been in use. But in the last year truck cranes, tractors, power and hand hoists, power jacks, and locomotive and overhead cranes have bulked large in the railroad buying picture, for in the shops there is not only the problem of transporting material over long horizontal distances but there is also the necessity for vertical lifts. Consequently, the railroads have ordered during 1948 more than 450 units of these various types of materials handling equipment. Efficient shop production demands that the least possible amount of time be spent in making set-ups for machine tool operations.

Here the hoist and crane are invaluable. Good examples of their application can be seen in practically any railroad shop.

There is little doubt that the railroads are becoming increasingly conscious of the fact that "a penny saved is a penny earned" and realizing that in mechanized materials handling they have one of their greatest fields for economies. Signs point to the fact that the railroads are "doing something" about cutting their handling costs.




# MAINTENANCE PICTURE SHOWS MIXED TRENDS

***Total expenditures rise to near record but rail and crosstie renewals show tendency to slip — Construction prospect is bright, with many large undertakings in progress or completed***

By MERWIN H. DICK
Engineering Editor

Some records or near records were established in the maintenance and construction fields in 1948, but they were not all of a favorable nature. Major progress was made in furthering badly needed improvement programs involving the fixed properties, and aggregate expenditures for the maintenance of these properties totaled up to the second highest figure on record. Unfortunately the rise in the latter expenditures was altogether the result of higher costs and wages; the actual amount of work done failed to increase, and one of the major categories (tie renewals) slipped to an all-time low for the period for which records are available.

With official figures for the first ten months as a basis it is estimated that the total expenditures of the Class I railroads for the maintenance of their tracks and structures in 1948 amounted approximately to $1,350,000,000. Included is an amount to cover a wage increase of seven cents an hour, retroactive to October 1, as recommended by the President's emergency board on December 17. The total expenditures for maintenance are now so severely distorted by inflated costs and wage rates that they no longer accurately reflect the amount of work done, and comparisons with previous years are of little more than academic interest. For the record, however, it may be noted that the estimated figure for 1948 exceeded the 1947 total by $138,000,000, or 11.4 per cent, and that it is the highest on record except for 1945, when maintenance expenditures amounted to $1,411,306,000.

In spite of the substantial increase in maintenance expenditures in 1948 there was no change in the maintenance ratio (maintenance expenses expressed as a percentage of operating revenue). Based on the income and expense figures reported for the first ten months this ratio remained at 14.0, the same as in 1947. The fact that it failed to increase along with maintenance expenses reflects a corresponding upturn in revenues, attributable to the higher rates that the railroads were permitted to put into effect. Somewhat disconcerting is the fact that the maintenance ratio is showing no disposition to return to the lower level that prevailed prior to 1945. For the 10 years ended with 1944 the average maintenance ratio was 11.7, the minimum during this period being 10.7 in 1942 and the maximum being 13.4 in 1944.

## *Rail Renewals Dip Slightly*

The need for new rail to replace worn-out material is probably the most pressing need of the fixed properties. Since the end of the war the roads have been trying to get enough new rail to regain the ground lost as a result of the combination of heavy traffic and inadequate renewals that prevailed during the war period. But 1948 saw little progress in this direction. One of the charts shows the trend of rail renewals on the Class I roads since 1920, and includes figures giving the net tons of new rails laid in replacement from 1940

Facing page — This Diesel locomotive repair shop, built by the Chicago & North Western at Chicago at a cost of $1,767,570, was completed late in 1948

Right — While tie renewals as a whole declined somewhat in 1948, some roads made heavy renewals at particular locations. This view was made on the main line of the Santa Fe at a point where ties were being renewed in connection with a ballast-cleaning project

to 1948, inclusive. The amount shown for the latter year (1,550,000 tons) is an estimate based on figures supplied to *Railway Age* by practically all Class I roads. It represents a decline of 67,140 tons, or 4.1 per cent, compared with 1947, was substantially below the peak war years of 1944 and 1945, but was higher than for any other previous year since 1930.

While comparison of the estimated tonnage of rail renewals for 1948 with previous years is interesting, the adequacy of this tonnage can only be measured in terms of *present-day needs*. The amount of new rail received and laid last year was, on the whole, not sufficient to satisfy these needs as they are seen by the railroads. Continuing a situation that originated during the war, the railroads, instead of simply placing orders for the amount of rail desired, as had been the previous practice, are still in most cases being told how much they can have, and the amounts received on this basis have little relationship to actual requirements. The general understanding at the beginning of the year was that the allotments for 1948 would be on about the same basis as in 1947, but later some of the individual quotas were reduced and in others the rail was delivered too late in the year to be laid. These factors accounted to an important degree for the decline in rail renewals in 1948 as compared with the previous year.

### Crosstie Insertions at Record Low

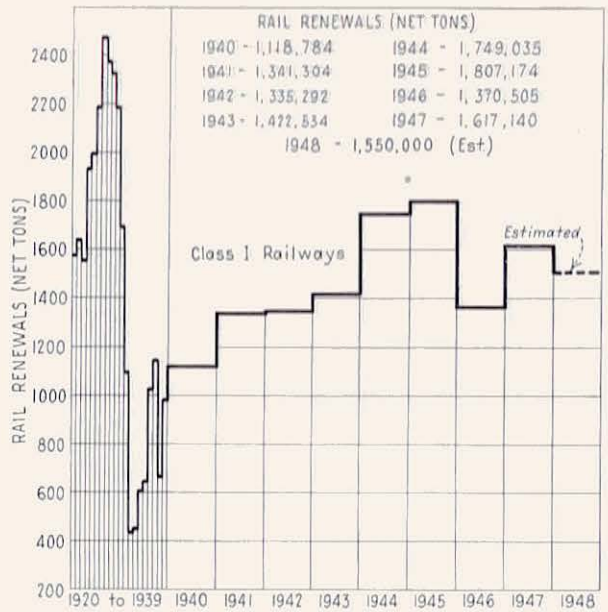
Another chart shows the trend of tie renewals made by the Class I railroads since 1920 and gives actual figures showing the renewals for the years 1940 to 1948, inclusive. The figure for 1948 is again an estimate based on figures submitted by most of the Class I lines. Compared with 1947 the estimated total tie renewals for last year (36,500,000) show a reduction of 790,000 ties, or 2.1 per cent. More significant is the fact that tie renewals have now slipped to the lowest level in history. The most important factor in this long downward trend has been the universal practice of treating ties with preservatives, and there is little question that this factor had some bearing on the further decrease that occurred in 1948. Other influences at work during the year, whose effect, however, was local rather than general, included labor shortages in some localities and program reductions for the purpose of controlling expenses.

The foregoing figures show that total expenditures for maintenance-of-way and structures in 1948 rose moderately, even though there was a decline in two of the major indices of actual work accomplished. The answer, of course, is that increases in unit costs were more than sufficient to counteract the decline in work programs and the efforts that continued to be made to control costs through mechanization and other means. The wage increase of 15½ cents an hour that went into effect on September 1, 1947, was an important factor in causing the total expenditures for 1948 to rise above those for 1947, and the emergency board's further recommended increase of seven cents an hour, retroactive to October 1, 1948, was still another straw for the camel's back.

### Labor Still Scare Last Year

Higher prices for materials also did their part in raising the total expenditures. For example, the price of new steel rails, which started the year at $55 per net ton, had increased by the year's end to $65, and several mills had put into effect a further increase of $6 per ton. It was the same way with ties. At the end of the year the roads were paying about 17 per cent more for ties than at the beginning.

The maintenance-of-way departments continued to be hampered to some extent by manpower shortages during 1948, although the situation was generally somewhat easier than in 1947. One of the principal difficulties was in getting enough men to fill out track extra gangs, one road reporting that its gangs had only about two-thirds of the manpower required for efficient operation. One explanation of this situation is that, with the higher wages now being paid, the type of individual normally found in such gangs now finds he doesn't have to work as long as before to get a "stake." Another adverse development is a growing disinclination of workers to accept positions that require them to be away from home for any length of time. Rather than do so some workers prefer to remain unemployed, subsisting on unemployment com-

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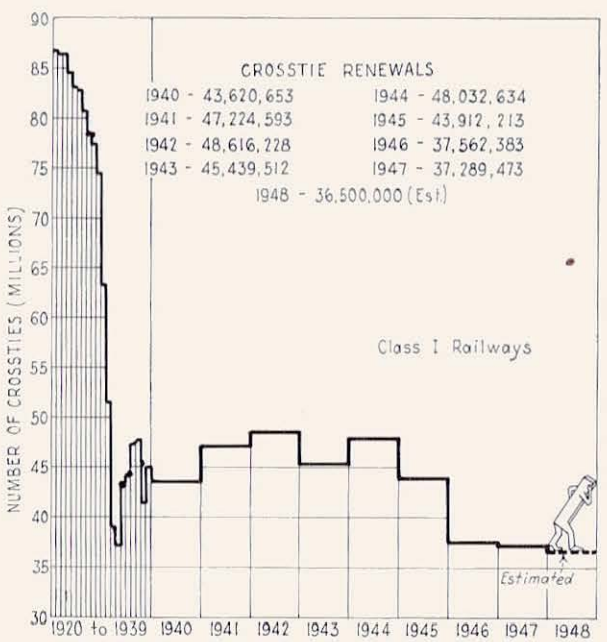


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## EXPENDITURES FOR MAINTENANCE OF WAY AND STRUCTURES, CLASS I RAILWAYS

(Thousands)

| | Average 1925-1929 (Inclusive) | 1938 | 1939 | 1940 | 1941 | 1942 | 1943 | 1944 | 1945 | 1946 | 1947 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Superintendence | $57,262 | $38,935 | $39,072 | $40,231 | $43,407 | $49,461 | $57,592 | $63,790 | $65,590 | $72,538 | $75,353 |
| Roadway Maintenance | 83,698 | 37,219 | 36,112 | 38,372 | 47,923 | 69,701 | 110,764 | 121,072 | 118,453 | 93,495 | 99,137 |
| Tunnels | 2,608 | 1,256 | 1,210 | 1,374 | 1,780 | 4,529 | 3,668 | 4,222 | 3,734 | 2,919 | 2,817 |
| Bridges, Culverts, etc. | 43,471 | 24,200 | 24,782 | 26,514 | 31,754 | 40,801 | 44,356 | 51,227 | 48,540 | 43,272 | 42,499 |
| Ties | 114,859 | 53,762 | 59,910 | 58,353 | 64,928 | 75,141 | 84,982 | 100,446 | 96,314 | 89,620 | 96,454 |
| Rails | 47,402 | 17,406 | 22,065 | 22,736 | 24,684 | 25,199 | 33,146 | 39,544 | 42,831 | 38,868 | 34,377 |
| Other Track Materials | 48,354 | 22,817 | 29,670 | 33,428 | 38,711 | 40,091 | 50,541 | 57,220 | 60,955 | 52,887 | 57,418 |
| Ballast | 19,379 | 7,744 | 10,343 | 11,592 | 15,093 | 20,107 | 25,168 | 28,493 | 31,787 | 24,121 | 28,406 |
| Track Laying and Surfacing | 211,067 | 103,420 | 114,932 | 117,839 | 156,142 | 212,594 | 289,636 | 366,999 | 356,823 | 326,252 | 337,406 |
| Fences and Snow Sheds | 18,946 | †2,939 | †3,235 | †3,408 | †3,930 | †4,031 | †5,877 | †8,121 | †6,310 | †6,513 | †6,689 |
| Buildings | 79,000 | 34,315 | 41,018 | 46,852 | 60,412 | 80,663 | 102,680 | 114,513 | 117,714 | 96,047 | 98,892 |
| Water Supply | 10,444 | 4,672 | 5,207 | 6,020 | 6,736 | 8,561 | 9,680 | 11,473 | 11,129 | 9,521 | 10,005 |
| Tools and Equipment | 18,230 | 11,456 | 13,720 | 15,434 | 18,971 | 20,892 | 23,397 | 28,664 | 31,244 | 30,318 | 35,341 |
| Injuries | 5,907 | 2,806 | 2,929 | 3,220 | 3,547 | 4,642 | 5,903 | 6,856 | 7,453 | 7,050 | 7,878 |
| Removing Snow, Ice and Sand | 9,947 | 5,239 | 6,110 | 9,030 | 5,995 | 8,739 | 12,798 | 14,882 | 27,729 | 11,828 | 22,838 |
| Miscellaneous | 78,449 | 51,961 | 56,516 | 29,202 | 79,076 | 131,206 | 248,093 | 245,770 | 384,700 | 244,991 | 256,586 |
| | $849,021 | $420,147 | $466,831 | $497,031 | $603,088 | $796,358 | $1,108,281 | $1,263,092 | $1,411,306 | $1,150,241 | $1,212,096 |

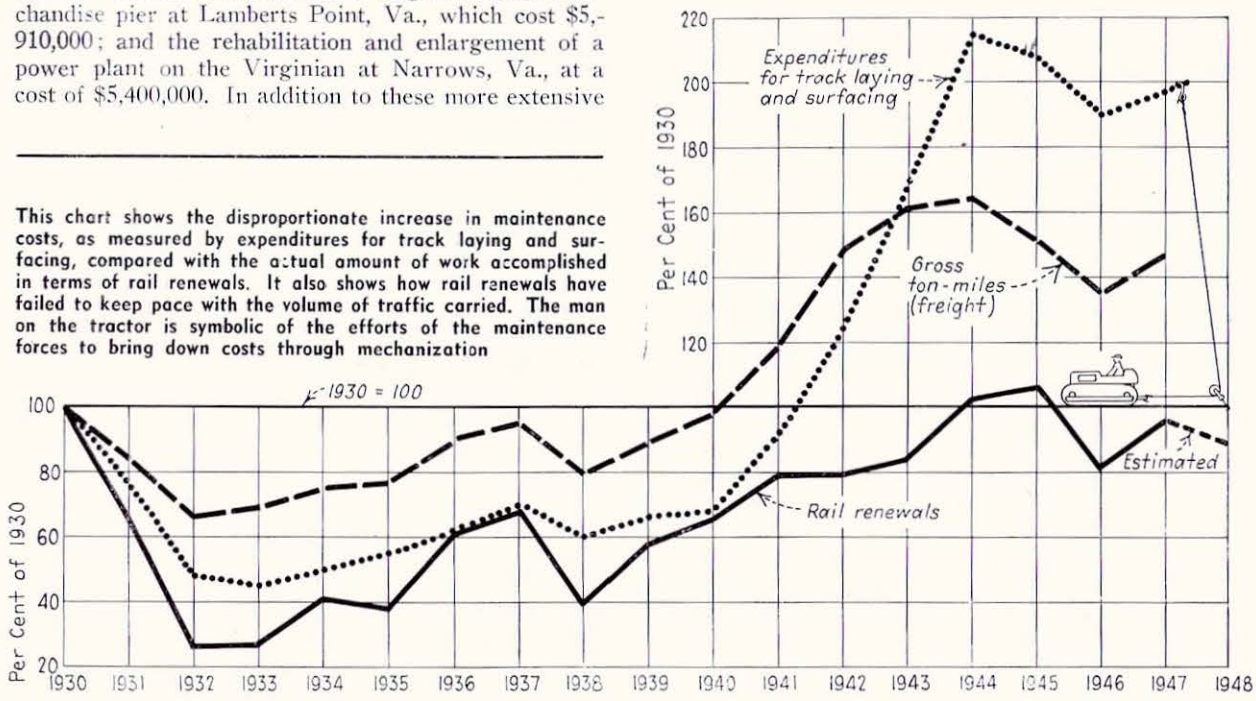
Note: Miscellaneous includes such items as signals and interlocking, depreciation, deferred maintenance, amortization and unclassified charges.
†Includes signs, as well as fences and snow sheds.

improvements to a viaduct at Richmond, Va., at a cost of $2,807,000.

Several large Diesel locomotive repair shops were in progress during the year. One was the Chicago & North Western's new shop at Chicago, which was completed at a cost of $1,767,570, and another was a shop, to cost $1,120,000, that the St. Louis-San Francisco was building at Springfield, Mo., in connection with other important work at that point.

Large projects in other categories include the $20,000,000 coal and ore-handling facilities built at Toledo by the Lakefront Dock & Railroad Terminal Company (New York Central and Baltimore & Ohio); a $2,000,000 union passenger station being built at Akron, Ohio, by the B. & O. and the Pennsylvania; the drilling of a 6,700-ft. tunnel at Aspen, Wyo., by the Union Pacific at a cost of $7,713,340; the completion by the Norfolk & Western of a large tidewater merchandise pier at Lamberts Point, Va., which cost $5,910,000; and the rehabilitation and enlargement of a power plant on the Virginian at Narrows, Va., at a cost of $5,400,000. In addition to these more extensive undertakings the construction picture for 1948 included numerous smaller jobs involving the construction or modernization of freighthouses, passenger stations, terminal facilities of various types, car shops, water stations, oil storage plants, and grade-crossing elimination structures.

With reference to prospects for 1949 and the future, the most authoritative information available is contained in the testimony of Ralph Budd, president of the Burlington Lines, in hearings before the Interstate Commerce Commission on the railroads' application for increases in freight rates. On the basis of the plans of his road, which expects to spend about $50 million for improvements during the next 10 years, Mr. Budd estimated that the Class I roads would spend about $2 billion for such purposes during this period.




**This chart shows the disproportionate increase in maintenance costs, as measured by expenditures for track laying and surfacing, compared with the actual amount of work accomplished in terms of rail renewals. It also shows how rail renewals have failed to keep pace with the volume of traffic carried. The man on the tractor is symbolic of the efforts of the maintenance forces to bring down costs through mechanization**

# STEEL! STEEL! MORE STEEL FOR FREIGHT CARS!

***One-fifth of freight cars owned by Class I roads are over 30 years old—That number will increase unless retirements are 90,000 a year—Total production in 1948 for all roads and private lines was 112,000 cars***

By C. B. PECK
Mechanical Department Editor

Total freight-car production during 1948 showed a definite improvement over that of 1947, just as 1947 showed a definite improvement over 1946. The production in the shops of car builders, railroads and railroad-owned private car lines amounted to 41,955 in 1946, increased by 26,567 to 68,522 in 1947, and, in the twelve months ended with November, 1948, amounted to over 112,000, an increase over the calendar year 1947 of nearly 44,000. Only twice during the year did the output exceed the goal of 10,000 new freight cars per month — in June when the output was 10,387 and in August when it was 10,362. The average for the 12 months' period ended with November was 9,352 cars a month. This is probably as close to a monthly goal as it is possible to approach on a month-by-month basis.

This is evident from the causes of failure to meet the goal as seen by Col. J. Monroe Johnson, director of the Office of Defense Transportation, for the first half of the year. These are (1) temporary loss of steel production caused by weather and coal strikes; (2) failure of builders and manufacturers of component car parts to absorb an average of 6,800 tons of steel per month pledged by so-called premium-price mills; (3) failure of steel producers to accept assignments of full allocations; (4) limited production of plates of large dimensions and reduced production of axles. Monthly losses of production are seldom, if ever, made up.

### Reasons for Freight-Car Need

There are two reasons for the need for new freight cars. One is the lack of a sufficient number of freight cars to meet traffic demands; the other is the need to replace the aging freight-car inventory. Better than one-fifth of all freight cars on Class I railroads as of January 1, 1948, according to figures compiled by the American Railway Car Institute, are over 30 years old — some of them well over 40 years old. About 12 per cent of all cars on Class I railroads ranged from 26 to 30 years of age, and over 23 per cent, from 21 to 25 years of age. Thus, over half of the cars then in service were 21 years old or older.

Of all of the freight cars built from 1906 to 1917, inclusive (those 30 to 42 years old), approximately one-quarter are still in service. Of those built between 1918 and 1922, inclusive (those 26 to 30 years old) practically one-half are still in service. Four-fifths of those built during the next five-year period (1923 to 1927) are still in service; a very small percentage of those built after 1927 have been removed from service.

These figures represent the situation as a whole. The age groups on individual railroads vary widely from no cars over 30 years old to practically 60 per cent of all cars over 30 years old, and from less than 10 per cent to over 65 per cent in the one- to ten-year age groups. The pattern most often repeated among individual roads shows the largest number of cars in the 21- to 25-year age group (built in 1923 to 1927, inclusive) with very low percentages in the 16- to 20-year age group (built 1928 to 1932, inclusive) and in the 11- to 15-year group (built 1933 to 1937, inclusive).

In considering the significance of the large numbers of freight cars in the older groups, it cannot be assumed offhand that obsolescence is a straight-line function of age. It is influenced by changes in demand for particular classes of cars and changes in construction. The influence of age as such is indirect. Changes in traffic conditions may make certain types of cars obsolete on some railroads well before replacements would be economical because of changes in materials or type of construction. Changes in construction create obsolescence when it becomes cheaper to build and operate new cars then to maintain and continue to operate the old cars.

Some cars built between 1906 and 1918, so far as body construction is concerned, do not differ greatly from those of recent construction. Fifty-ton all-steel hoppers were built throughout that period. Box cars with both steel underframes and steel body frames were also coming into use, as were the single wood-sheathed cars with outside steel frames. Pressed-steel corrugated ends were being applied to box cars during the last half of that period as were also cast-steel truck side frames and bolsters. Cars from this period which are still in service have all been rebuilt, some of them several times, and today are equipped with cast-steel trucks, and most of them with modern brakes, draft gears and couplers.

### Maintenance Costs High

It is evident, therefore, that age, as determined by the date originally built, is not alone a measure of obsolescence. But by no means all of the cars over 30 years of age are of the most modern type of construction as of the time they were built, and thousands of them have become expensive to maintain. The price of new cars is much higher now than when these old cars were built, but so is the cost of repairing them. Since depreciation has largely recovered the original investment in cars 30 or more years old, the difference in first cost between the old and the new is not the

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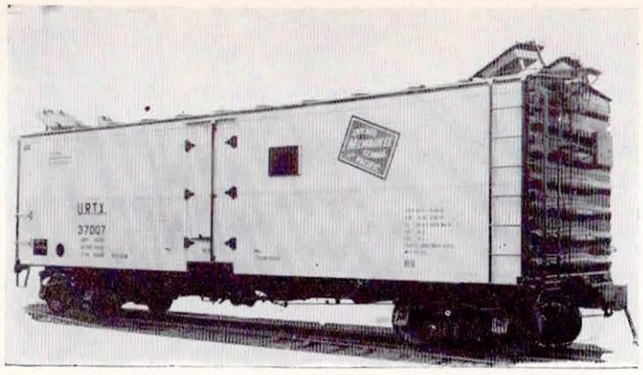


**Above left—Refrigerator car with stage icing, convertible bulkheads and air circulating fans built by the General American Transportation Corporation**

**Above right—Box car built by Pullman-Standard Car Manufacturing Company of which the PS-1 is a prototype**

**Right—A 70-ton welded hopper car built by American Car & Foundry Co.**

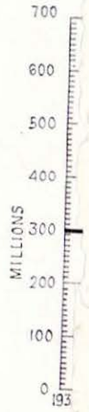
major factor in the financial problem involved in their replacement. The major factor is the relation of the first cost of the new car to the cost of maintaining the old car. More than 37 per cent of the box cars in service during 1947 were of less than all-steel as were over 15 per cent of the open-top cars, and in general these are more expensive to maintain than those of all-steel construction. How urgently the desire to replace these cars will influence the overall demand for freight cars will depend upon first-cost and maintenance economics.

For some years during the war retirements declined until they were practically non-existent. Since 1943, however, they have been increasing each year. The Interstate Commerce Commission reports that in 1944 freight cars withdrawn from service for sale or demolition by Class I railways were 24,589; in 1945, 44,247; in 1946, 52,713, and as recorded by the American Railway Car Institute, in 1947, 62,594. While comparable figures are not available for 1948, they may run as much as a third higher than in 1947 — between 80,000 and 90,000. Expanded to include retirements by private car lines and railways other than Class I, this leaves a net increase in railway cars for the year on all accounts of not many more than 20,000 freight cars.

If the number of cars of Class I railroad ownership over 30 years of age is not to increase, an average of not less than 90,000 freight cars must be scrapped each year for the next ten years. Deliveries of new cars to the Class I railways from 1918 to 1927, inclusive, amounted to an average at approximately this level, so it will require larger retirements if any headway is to be made in reducing the number of these old cars. Retirements of 100,000 cars a year for the ten-year period would reduce the number of cars over 30 years old by less than one-third at the end of that time. It was facts such as these which led Colonel Johnson to estimate that, with a continuance of the program of 10,000 new freight cars a month, it will take 23 years to reach a total inventory of the 2,000,000 cars needed.

The monthly program of 12,000 new cars which Colonel Johnson is now seeking to implement would materially improve the rate at which the Class I inventory increases if orders placed by the railroads continue at a rate to support it. The present backlog of unfilled orders as of last December 1 is 106,000 — down about 28,000 from the year's high on May 1 — and the distribution is such that there is some question as to how long it will keep all of the car builders' plants up to full production.

So, there are uncertainties as to how the freight-car supply will be affected during 1949. Will more steel be available than in 1948? If so, will present car prices discourage the placing of sufficient orders to make available the capacity output of the car building plants?




Railway

Daylighted tunnel on the Interoceanic line—now a division of the National Lines—which was recently converted to standard gage. Bridge in the foreground is being strengthened

# MEXICAN RAILWAYS "GO INTO RED" IN 1948

By J. M. OROZCO ESCOBOSA
Our Mexican Correspondent

***Federal government takes steps to iron out economic conflicts and strengthen management's hands, as lines show operating loss for the year — Further improvements pushed***

A comparatively slight decrease in freight and express traffic, accompanied by a heavy decline in passenger traffic and continued increases in expenses, created an unbalanced state of affairs in the finances of the National Railways of Mexico in 1948, to the extent of a 65 million peso* loss in the operation of its properties, seriously injuring the railroad's credit. This, together with other factors, prompted the federal government to take several steps — including the filing of a petition with the labor authorities covering matters in economic conflict, and the drafting of a new law, which has been approved by Congress, changing the management structure of the lines, with the view of setting up an organization somewhat similar to the corporate form and giving the board of directors authority over the general manager which it did not have before.

The new board of directors will be composed of eight members, one representing the federal Treasury Department, who will be president; one each from the Departments of Communications, Agriculture, and National Economy; one each from the Confederation of Chambers of Commerce and the Confederation of Chambers of Industry; and two representing the Mexican Railway Syndicate. Four railroad technicians — a civil engineer, an economist, a mechanical engineer and a certified public accountant — will be attached to the board as advisers.

### *Management Given Freer Hand*

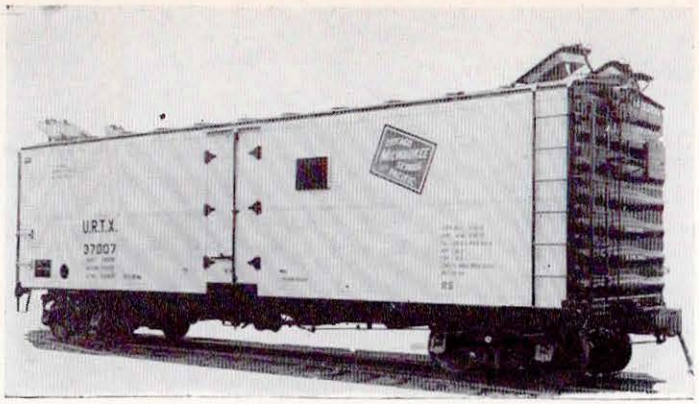
The board will have full authority to formulate the administrative program; to approve budgets, financial reports, additions and betterments, rehabilitation projects and pensions; and to establish standards, organizations, efficiency ratings, etc. It will also establish committees on finances, budgets, working relations and regulations, and on organization and efficiency. The exception will be that the general manager will be appointed by the President of the republic, and the president of the board will have power to veto the board's decisions when he considers they are inadequate or harmful to the administration of the lines.

Besides filing the petition on economic conflict, which calls for financial reorganization and modification of some clauses of the collective labor contract which hamper good management of the railways, a presidential resolution establishes measures for the National Lines to retain the 10 per cent tax on gross income, beginning January, 1949, which amount is to be invested in the purchase of equipment and materials for the construction of new lines. This will amount to 40 to 50 million pesos a year.

An increase in freight rates was granted the National Railways, which is expected to yield 70 million pesos a year. The federal treasury was instructed to furnish the lines 65 million pesos to pay their floating debt for the year 1948, and to obtain the necessary credit to purchase modern rolling stock and motive power, and to modernize their shops.

This reorganization is being put into effect at a time when there is deep division in the ranks of the railway syndicate, but inasmuch as the changes are President Aleman's plans, there is no conflict between labor and management. The modifications, among other things, tend to reduce labor interference in management, and particularly so as regards management's authority freely to appoint officers; to operate trains on a strictly technical and economical basis; to transfer personnel wherever required; to restrict the payment of overtime; to establish a reasonable pension plan and department, and division seniority rights instead of system rights; and to make promotions based on knowledge and skill instead of on seniority alone.

*The peso today is equivalent to 14.5 cents in United States currency.



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major factor in the financial problem involved in their replacement. The major factor is the relation of the first cost of the new car to the cost of maintaining the old car. More than 37 per cent of the box cars in service during 1947 were of less than all-steel as were over 15 per cent of the open-top cars, and in general these are more expensive to maintain than those of all-steel construction. How urgently the desire to replace these cars will influence the overall demand for freight cars will depend upon first-cost and maintenance economics.

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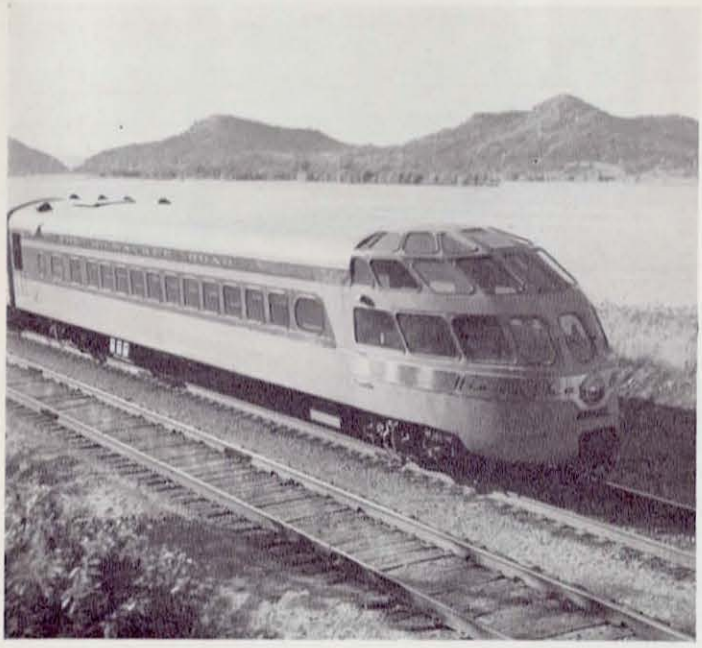


The year 1948 saw a number of innovations in equipment designed to afford passengers a better view of the scenery

# PASSENGER SERVICE BETTER —AND MORE COSTLY

***Chief managerial job today is pricing which takes account of cost, competition, volume and public appeal***

By WILLIAM H. SCHMIDT, JR.
Assistant Western Editor

In contrast to the other forms of travel, the railroad offers companionship with a wide range of choice

Pricing is what keeps most passenger traffic men awake nights as railroading moves into 1949. They face, on one hand, greatly increased costs and higher break-even points. Higher executives tell them they must bear their share of the higher cost of running a railroad today, and not put it all on freight. Against these facts there are arrayed falling traffic, increasing improvements in competitors' services and equipment, lesser increases in the latters' fares than in the railroads', and—most important—a notable increase in the number of private automobiles and improvement in their condition. The railroads, it is clear, cannot respond to inflation with the normal weapon of proportionately higher prices. They are bumping ceilings.

The question is not whether they are *justified* in raising their fares even more than they have; the doubt lies in whether higher fares will increase the overall net. That the western and southern lines have not seen fit to match the most recent increase in basic coach and first-class rates made by the eastern roads is evidence that the passenger fraternity does not find itself of one mind regarding the optimum fare level. The new fares have not been in effect long enough to warrant valid conclusions on the relative wisdom of the actions taken, of course. Also the greater proportion of passenger revenues to total income of several large eastern lines persuades them to take action on fare levels more quickly and with less experimentation than the average railroad.

The new cars and locomotives are good to look upon. That cars cost about twice what they did before the war is not wholly the result of inflation. They are finer cars in every way, and refinements cost money. Perhaps in the more widespread provision of modern luxury equipment lies the most convincing argument for fare increases—the one most likely to gain public acceptance.

The streamliner has become the "norm" of passenger service. Only a few years ago each individual streamliner won wide attention; now, so numerous have they become, only their exceptional features can be generally publicized. Although the streamliner was introduced only 15 years ago, many of the earlier ones have been replaced with entirely new equipment and their units redistributed to secondary runs. Of 37 streamliners in service in 1939, at least 14 have been replaced completely by new and improved cars and locomotives.

The train-riding public may now travel on some 120 streamliner runs protected by about 250 complete sets of rolling stock (trains made up wholly of new or rebuilt cars powered by new or rebuilt locomotives). These trains run almost 175,000 miles every day of the week and represent the ownerships of more than 40 railroads. These figures do not take into account the large number of nominally conventional trains which contain more than 2,000 new luxurious cars in their consists and are powered by new locomotives. Indeed, one of the most significant aspects of the last few years has been the mass replacement of cars—on a unit rather than train basis—on whole fleets of trains on densely traveled roads like the Pennsylvania and New York Central.

The higher break-even point in passenger train economics is making it necessary for the roads to seek abandonment of many local, secondary and branch-line

runs which might have been spared before the war. At the same time the accommodations on the runs of this category which remain are being greatly improved by new and rebuilt cars, plus older streamliner equipment released by new rolling stock on the "lead" runs. Even the unprofitable commuter service is coming in for an unprecedented spruce-up. Since commuters are considered "part of the family," most of the improvements are being made in strict accord with their preferences.

### *"Watcha Mean, No Roomettes!"*

Since 1940 the railroads have been unable to give some of their patrons the accommodations of their choice. No shortage can be rationed successfully. Despite the drop in traffic and increase in equipment, both reserved coach and sleeping car space to certain resorts are in short supply, while room accommodations are hard to get on many "businessmen's trains." The Interstate Commerce Commission is currently investigating the entire reservation procedure of the railroads and Pullman. The railroads have done more than the air lines in restrictions designed to curb block-buying, multiple reservations or black-marketing of space, obviously to their competitive disadvantage. If the I.C.C. takes that important fact into account before promulgating further regulations, its probe of the situation should prove of benefit to the railroads in killing unfounded rumors of their negligence and complicity. Meanwhile, as Pullman points out, the railroads must put into service more room accommodations with all practicable speed, if public demand is to be satisfied.

The iniquitous 15 per cent federal transportation tax continues to hobble domestic common carriers in competition with foreign travel and with the private automobile. The higher their fares, the more burdensome the tax. A government which claims to look out first for the "little man" saddles him with a substantial tax if he happens not to be able to afford his own car, and encourages him to crowd the highways.

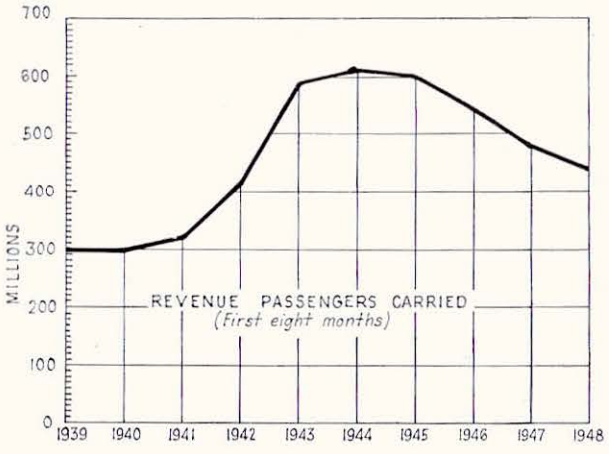
Traffic continued the downward trend which started in 1945. Passenger-miles in the first eight months of 1948 were down 10.5 per cent compared with the same period of 1947; number of passengers carried was down 8 per cent; and passenger revenues were down 0.7 per cent. Traffic was still high, nevertheless, compared with prewar levels. Passenger-miles in the first eight months of 1948 were 86 per cent above the same period of 1939.

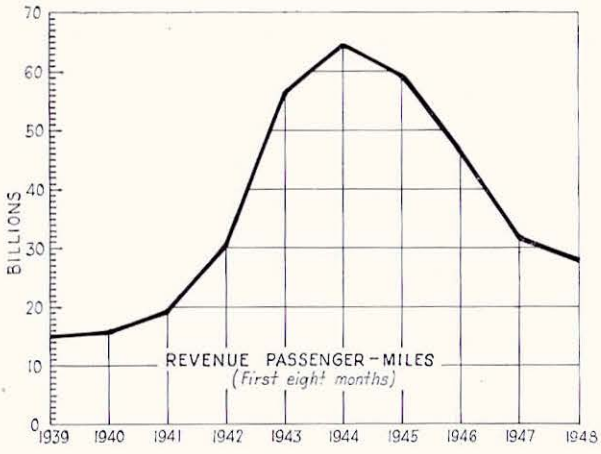
Fare increases accounted chiefly for the fact that revenues were down less than traffic. In February, 1948, most western and southern lines raised their basic fares to higher levels already in effect on the eastern roads, while in July, the latter raised their basic rates still further. Compared to 1939, the average railroad fare per passenger-mile in sleeping and parlor cars has increased about 27 per cent and, in coaches, about 31 per cent.

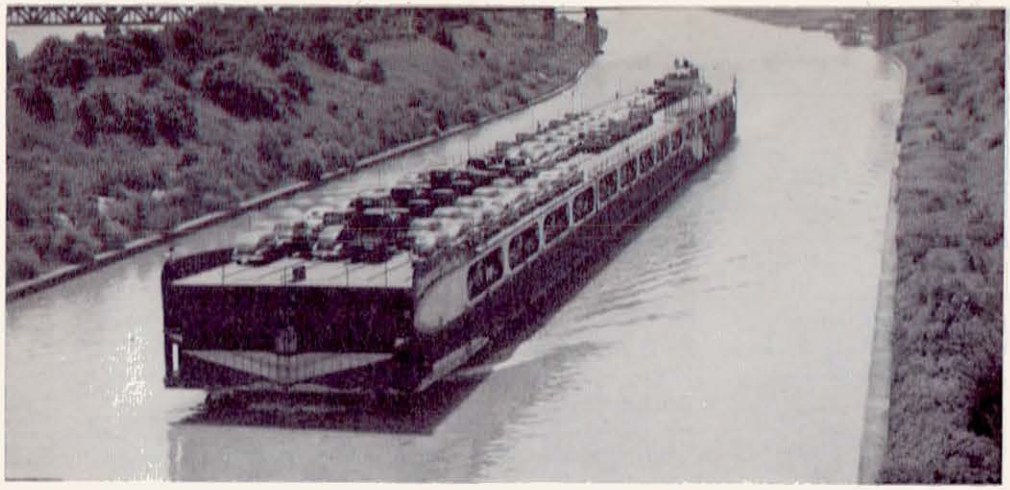
A counter influence on railroad traffic is apparent in military traffic, which has already increased substantially and promises to become more important this year. Because of the small number of camps authorized under the new draft and training program, and absence of large port movements, this traffic will probably affect individual lines unevenly. Competition should also be stiffer than ever before. The bus lines are expected to bid strongly for some traffic now moving under the rail agreement, while the air lines have been working on their friends in the Air Force for "air movement in the air age."

Special service features administered on a national basis have proceeded apace. About $1 million of business is handled each month on 95,000 rail credit cards outstanding; since their inauguration on a national basis on April 1, 1947, the cards have accounted for $13 million in revenue. Rail-auto service, re-established effective July 1, 1947, is now available in more than 300 cities. Some 820 tourist agencies and tour promoters now participate in the railroads' commission plan covering all-expense travel. In the first seven months of 1948, they sold about $6,700,000 worth of railroad business—more than their volume in the entire year of 1947.

The year 1949 will challenge railroaders chiefly as merchandisers. Because declining volume, resistance to fare increases and greater competitive pressure make inflation a nightmare, instead of the mere irritation it is to many businesses, careful study of optimum pricing and wooing of the large mass of non-railroad travel must be given at least equal attention with equipment, service, schedules and cost controls.





Diversion of traffic to inland waterways increased in 1948

# RAILROADS AND SHIPPERS STILL HAVE TROUBLES

***Freight traffic down slightly; diversion to competitors aggravated by rate increases, decentralization and basing point confusion; shippers help manfully on car supply and damage prevention***

By WILLIAM H. SCHMIDT, JR.
Assistant Western Editor

The railroads' freight traffic, measured in ton-miles, was down only 1.4 per cent in the first eight months of 1948, compared with the like period of 1947. Traffic is shifting geographically. The Southern region showed an increase in traffic of 0.7 per cent; the Western district's volume declined only 0.5 per cent. On the other hand, ton-miles in the East went down 3.1 per cent and in the Pocahontas region, 2.3 per cent.

In the 45 weeks ended November 6, carloadings were 3.4 per cent under the same period of 1947, but were 4.2 per cent higher than in 1946. Ore carloadings were at a record high, however, being 9.6 per cent over 1947. L.c.l. loadings were 9.6 per cent under 1947 and 12.6 per cent under 1946.

## Cars Will Still Be Scarce

The railroads handled a record grain harvest, marked by higher than expected yields and late maturities which caused the shipping seasons in the various regions to overlap and required a permit system to prevent the loading of cars for which terminal space was not available. Traffic was affected adversely by the coal strike in March and April and by maritime stoppages on both coasts in October and December. There is evidence that some of the railroads' current high freight volume is due to trade dislocations which are temporary, as, for example, the shipment of steel from Utah and the Pacific coast to Mid-west points; crude oil to refineries in anticipation of pipe line construction; coal all-rail to lake heads and seaports because, denuded of coal by the strike, large consumers could not wait for slow water movement; and diversion of coal to railroads to release lake vessels for quicker turn-around in ore service.

A decline in ton-miles of 2.5 per cent is forecast for 1949 by the Bureau of Railway Economics. Nevertheless, carloadings in 1949 are expected either to match or to exceed 1948, in the opinion of the Car Service Division.

Hence, there will undoubtedly be shortages, at least in box cars and gondolas. Shippers and railroads will have to continue the long fight for quicker turn-around, heavier loading and an increase in the wherewithal for new cars.

Despite the limited supply of the latter, and the continuing high level of carloadings, 1948's car shortage was, in general, only about half as severe as in the previous year. This favorable trend was due chiefly to continuance of minimum load rules, shipper zeal in effecting minimum car detention, and greater movement efficiency generally.

The average freight train load in the first half of 1948 was 1,153 tons, 7 tons higher than the previous "high" recorded in 1947, and 14 tons above the average of 1944, when wartime traffic was at its peak. This was accomplished without a decrease in train speeds. Net ton-miles per train-hour averaged 18,212 in the first half of 1948—the highest figure on record. The year brought also the highest average train length in history. Despite investigations and recommendations, charges and countercharges, anent an increase in the rate of production of new cars, deliveries were inadequate. The 10,000 car mark agreed upon as the minimum was reached only two times in 1948. During the 12-month period ended October 31, the railroads enjoyed a net gain in freight car ownership of only 26,282 cars. Serviceable cars on hand on November 1 totalled 1,753,444, compared with 1,734,464 a year previously.

Gondolas, which replaced box cars as the Number One problem in car supply during 1948, actually declined in number during the same period—from 299,805 on November 1, 1947, to 290,288 a year later. Shortages were reported in all parts of the country. Steel mills in Eastern-Allegheny territory, for example, piled large tonnages on the ground awaiting shipment, or diverted to truck and barge. To meet the emergency, the Car Service Division ordered western and southern roads to move gondolas back to home territory at once—loaded or empty. Late in September, President W. T. Faricy of the Association of American Railroads wrote all roads having what was deemed an inadequate supply of gondolas, calling attention to the C.S.D.'s formula for determining adequacy of ownership and urging prompt purchases. It is significant that, of the 10,527 cars for which orders were placed in October, 6,180 were gondolas.

Loss of traffic to competitors is increasing. In 1948 the railroads moved (including mail and express) 64.3 per cent of total inter-city ton-miles, it is estimated by the Bureau of Railway Economics, compared with 67.3 per cent in 1942; 72.7 per cent in 1944 (highest railroad traffic year); 63.3 per cent in 1939; and 76.4 per cent in 1926. In short, the railroads are now back almost to the relative status of prewar 1939. Reasons cited by shippers for increasing diversion are bigger increases in rail rates than in their competitors'; unequal increases in rates among commodities and territories; poor railroad transit time; lack of railroad cars in the number and types required; and the continued minimum load restrictions for carload shipments and merchandise cars. Railroad traffic officers say, in response, that their common carrier rivals have higher costs, too, and may raise their rates, though government subsidy accounts in great part for their lower charges; that common carriers are handicapped by the three per cent federal transportation tax in competing with private carriage; that car supply is improving substantially; and that, until the car supply is more adequate, load restrictions must be maintained in the interest of shippers as a body.

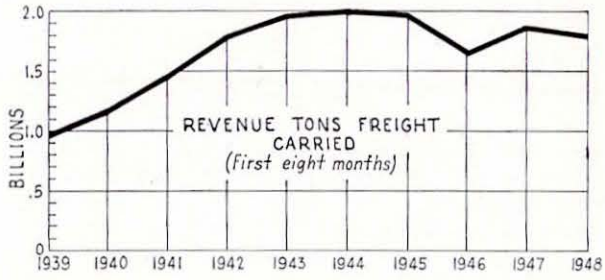
### What of Freight Absorption?

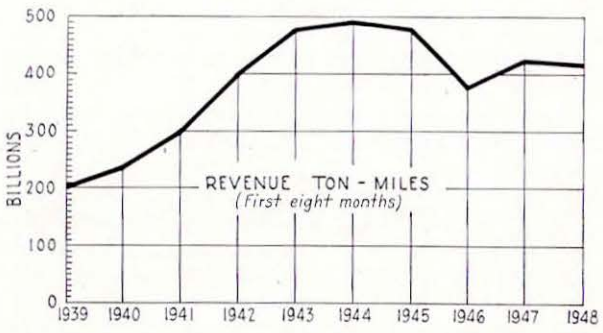
Shippers are almost unanimous in the belief that perhaps the greatest threat to railroad traffic inheres in the April 26 decision of the Supreme Court upholding the Federal Trade Commission's "cease and desist" order against the cement industry's basing-point system of pricing. The order in question has thrust the whole business world into confusion; members of the commission itself do not agree on interpretation of the order. Some take the view that it prohibits only conspiracy or agreement on the basis of prices—not the absorption of freight charges by individual shippers in order to extend markets. But whatever the final outcome, railroad traffic is in immediate danger of erosion because numerous industries not parties to the cement order are eliminating basing point and zone pricing and substituting f.o.b. sales to protect themselves from legal penalties in the event absorption is held illegal generally. Some diversion, particularly in steel, already has been attributed to f.o.b. selling.

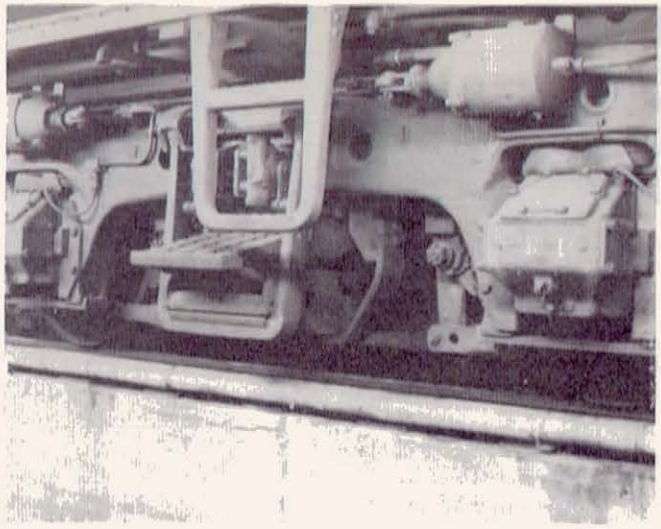
Elimination of absortion pricing hurts the railroads by putting cost ahead of all other considerations in buying transportation; encouraging the use of private or contract fleets and barges; and, most important, restricting markets and drying up the long-haul traffic which is the railroad's mainstay. In short, the rail carriers, whose principle has long been to "keep everybody in business everywhere," now face a new "Balkanization" of the economy, if a business-hating bureaucracy is to have its way. There is some hope that the citizenry will be sufficiently concerned over the dangers inherent in local monopoly to force legislators to take action to clarify the situation.

Freight loss and damage went still higher in 1948—both in absolute amount and in relation to freight revenues. The actual sum paid out in claims by the roads in the first half of the year was $66.7 million, an increase of 18.7 per cent over the already high payments in the same half of 1947. This sum was more than a quarter as great as the *entire net income* of the railroads in the same six-month period. Taking into consideration the suspense account now standing at $25 million—most of which will be paid eventually—the total freight loss-and-damage bill to be paid by the railroads for 1948 will be about $140 million—an all-time record. The ratio of the claims paid to revenues in the first half of 1948 was 1.75, compared with 1.66 in 1947, and was the highest on record, with the exception of the years 1919, 1920 and 1921.

This colossal waste baffles shippers and carriers because never before in history have they been more zealous in taking steps to reduce it. Whole industries, like the Porcelain Enamel Institute, have fostered conferences on packing and shipping; package manufacturers have unprecedented research programs under way; shippers' advisory board cooperation in the "perfect shipping" campaign was never closer; many roads now employ "container engineers" who make of packaging an exact science. The question is: "How much worse would the bill have been if carriers and their customers had been more apathetic?





A Diesel locomotive truck in a well-lighted service shop—Railroads are learning that good lighting pays off in quality of work done

# ELECTRICAL APPLICATIONS— THE CHANGING BASE LINE

By ALFRED G. OEHLER
Electrical Editor

***Conditions which apparently limit the use of electrical equipment have changed periodically and each change has extended the limits and made new calculations necessary***

When a Diesel-electric locomotive was tried on an American railroad in 1924, it was looked upon as a noble experiment. When such locomotives went into regular switching service in 1925, many railroad operators conceded their adaptability to that use, but felt they had no place in road service. The electric drive permitted the use of full engine horsepower at nearly all locomotive speeds and thereby permitted a relatively small Diesel to compete with a larger steam locomotive. This advantage, it was then pointed out, largely disappeared in road service.

But Diesel-electric passenger locomotives began to find considerable favor in the middle Thirties. The flexibility of power utilization, plus high availability, with absence of smoke and considerable appeal to the traveling public, soon encouraged wide application. The skeptics admitted the desirability of limited application on these grounds, and at the same time, explained that these advantages were not sufficient to justify the application of Diesels to freight service.

In 1941, Diesel-electric locomotives went into freight service, but many railroad operators have felt that this application would be definitely limited by economics. Diesels cost much more than steam locomotives, and could be used only in preferred service where they would be kept busy continuously. They would "eat their head off in the barn."

Then several other things happened. The railroads bought Diesels almost exclusively, and it was impracticable to keep steam locomotive prices at their former level without quantity production. The prices of the two came closer together, and the economic limit on the use of the Diesel was raised. The use of switching and transfer locomotives in main-line service also extended Diesel applications. The cost of Diesel locomotive maintenance is still not thoroughly established, but since the number of steam locomotives has decreased, their unit maintenance cost must go up. The last step comes when full Dieselization can be effected, and the cost of all steam locomotive facilities eliminated.

Over such expansion now hangs the specter of fuel. The household oil burner is a competitor for oil in the Diesel fuel range, but only a relatively small part of such oil has the necessary high cetane rating and low sulphur content required by Diesel engines. The same limited supply of special fuel is also in demand for jet planes. Operators always are concerned about oil price rises which would be detrimental to the Diesel's relative merit. This obstacle may be hurdled like all the rest. Some observers look to the gas-turbine locomotive for surmounting this difficulty since it can burn bunker C oil, or perhaps coal, but few railroads, if any, can go without new locomotives pending the realization of that type's potentialities.

On most railroads, full Dieselization is still a remote possibility. Nearly 85 per cent of all locomotives on Class I railroads are steam. This statement should be tempered by saying that steam locomotives make 61.8 per cent of the total passenger mileage, while Diesels account for 32.56 per cent and electrics 5.64 per cent. In road freight service, these figures are, respectively, steam 83.55 per cent; Diesel 14.67; and electric 1.78 per cent, while in switching service they are 63.05, 35.70 and 1.25 per cent. The latter figures are somewhat misleading since some road freight locomotives perform switching service. Were it possible to differentiate, the Diesel freight mileage would be less than shown, and the Diesel switching-miles or hours would be more. The evidence indicates, however, that steam locomotives will haul a major part of American freight for a long time to come.

The Diesel-electric locomotives now in service in the United States represent about 10,000,000 installed engine horsepower. For each engine horsepower, there must be at least one generator horsepower and one motor horsepower. The traction motors and generators then represent 20,000,000 hp. Actually, the total is greater than this, since these electrical machines must operate with high current and low voltage values at low locomotive speeds, and conversely at relatively high voltage and low current when speeds are high. To do this, they must have electrical capacity equal to about 1.8 times that of a machine which operates at constant voltage. Thus the total becomes 36,000,000 hp., or 27,000,000 kw.

The magnitude of this figure is emphasized when it is realized that the total capacity of all the country's central power stations is now about 55,000,000 kw.

The locomotive machinery too, must be operated under conditions of severe shock and vibration, with widely swinging loads, in all kinds of weather, by different operators with varying degrees of experience. The situation has presented the railroads with many new maintenance problems, and many of them must establish new maintenance facilities.

### The Diesel Shop

It has been said many times that a Diesel shop foreman is a good foreman if he is a precisionist, and is not a good foreman if he is not. He must, of course, have other qualifications, but the statement serves to emphasize a basic requirement. The report of the Joint Committee on Motors of the Electrical Sections of the Association of American Railroads states that a railroad-operated electrical repair shop can be justified if more than 20 units, either traction motors, main generators or auxiliary generators, must be overhauled per month. Under average operating conditions, 30 two-unit passenger locomotives would fill this quota. If this premise is accepted, a glance at the table of locomotives owned indicates a considerable deficit of railroad shops.

A glance at other electrical applications gives further indication of basic changes. Increasing lighting and air-conditioning loads on passenger cars, plus the use of electric refrigeration for diners, and a great variety of gadgets has caused railroads to use axle generators of 35-kw. capacity. Short terminal time, inadequate yard and terminal facilities, and the requirements of precooling make it necessary to send cars out on the line with batteries less than fully charged. It is up to the generators to supply the deficit on the road.

### Other Electrical Applications

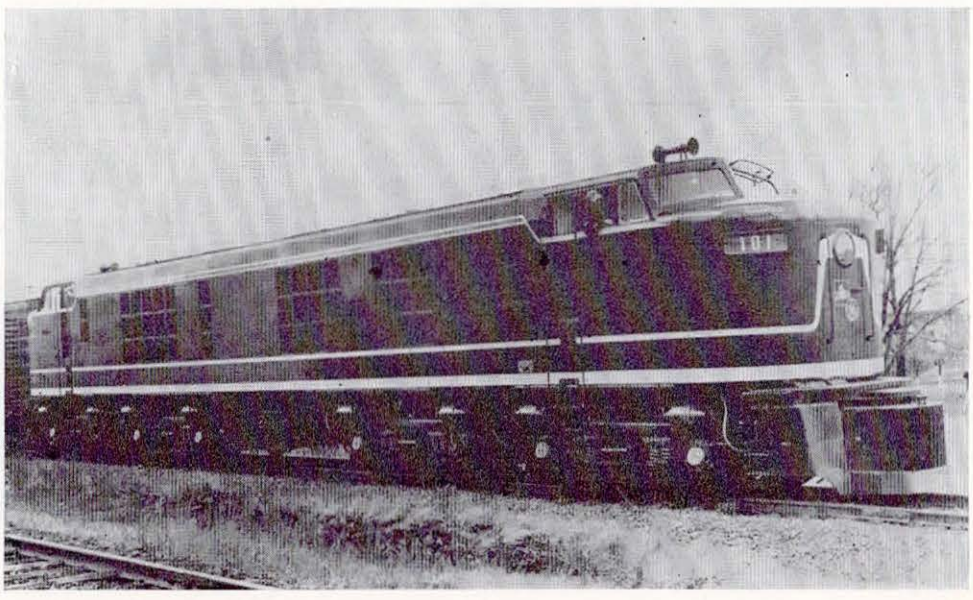
The added loads have caused four manufacturers to produce Diesel-engine-driven generators for individual car mounting. These are now undergoing trial, and it is hoped they also will prove adequate to supply the power needs of electric cooking on diners.

The caboose power-supply question has also undergone something of a metamorphosis. It still presents many difficulties, but the initial fear of the railroads that they would have to supply power for many purposes has been largely dissipated. Axle-driven power for cabooses has been used to the greatest extent and one railroad's experience indicates that sufficient power may be generated with a 1-kw. machine, when the power use is limited to communication only.

Other railroads use larger machines, particularly those which employ a combination of inductive and space radio, and perhaps include the use of a few caboose lights.

In part, the tendency to use axle power is initiated by the fact that railroads have axle-generators and batteries of reduced capacity available. Others prefer to use small Diesel-engine-driven generators because of their lower installation cost, and because they produce a larger amount of power under all service conditions. Some of these have chalked up records of 10,000 hours of operation between overhaul periods.

Shop lighting intensities of 15 to 30 foot-candles are now being used in railroad service, and in cases where such lighting has been applied, the users have become aware of the economic value of such installations. For these applications, incandescent lamps have been considerably supplemented with high-intensity mercury and fluorescent lamps. During the year, one yard lighting installation was made which supplies intensities of 0.24 to 4.9 foot-candles for passenger car servicing.



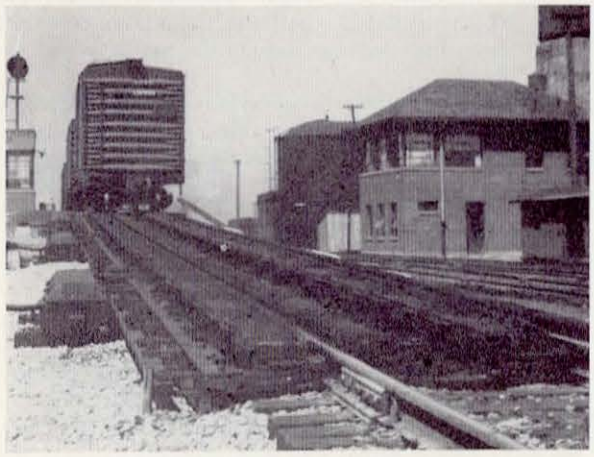
The potentialities of the gas-turbine-electric locomotive are now being tried out on the rails

# MORE AND BETTER SIGNALING

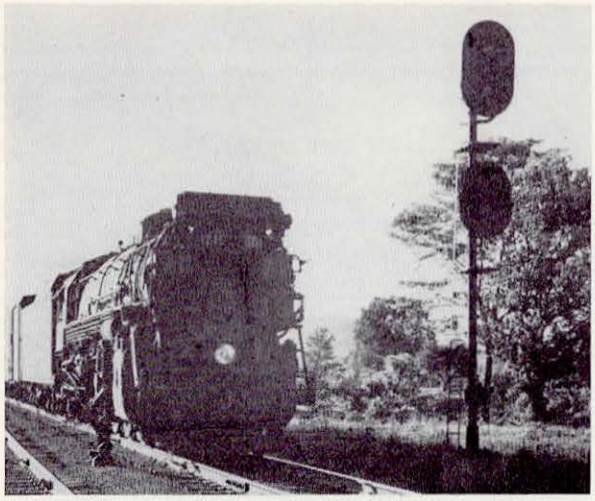
***Decided trend to install centralized traffic control rather than conventional automatic block—Extensive projects of cab-signaling and train-stop under way and in the offing—Four car-retarder yards completed in 1948—Large volume of signal construction due for 1949***

By JOHN H. DUNN
Signaling and Communications Editor

In spite of several adverse circumstances, a considerable volume of new signaling was installed during 1948, and much larger volumes of such construction are in prospect, not only for 1949 but also for the next four or five years. As reported in another article in this issue, the total number of signaling units placed in service during 1948 was 11,872, compared with 10,674 in 1947, and 15,000 to 18,000 in prospect for 1949.



Car retarders were installed in four large classification yards during 1948



The trend is to install centralized traffic control rather than conventional automatic block

The principal reason that construction of new signaling has continued in a large volume, and is due for further increases, is that modern signaling systems are now recognized as economic assets, rather than merely as safety devices. This new concept is based on the fact that modern signaling not only saves train time on the road, but also helps to get cars through yards more quickly, thus permitting more efficient utilization of cars, locomotives and tracks and, at the same time, rendering improved service to passengers and shippers.

### *Interstate Commerce Commision Order*

For example, numerous installations of centralized traffic control on busy single-track lines are saving an average of approximately a minute per mile for each through freight train. In some instances, installations of centralized traffic control permit the removal of 40 to 50 per cent of the sidings previously required when the switches were operated by hand and train movements were authorized by timetable and train orders. The installations of car retarders and power switch machines in classification yards increases the car capacity and permits operation at peak capacity day and night, regardless of weather conditions. The result is an important reduction in overall time for cars moving between shippers and consignees.

One of the circumstances affecting signaling construction during 1948 was the pending action on an order of the Interstate Commerce Commission, issued in June, 1947, requiring the railroads to install "a block system" on lines, not now so equipped, on which freight trains are operated at 50 m.p.h. or more and passenger trains at 60 m.p.h. or more, and protection such as automatic train-stop, train-control or cab-signaling in territories where trains are operated at 80 m.p.h. or more. It has been roughly estimated that this I.C.C. order requires the installation of track-circuit-controlled signaling on about 20,000 mi. of track, and the installation of train-stop, train-control or cab-signaling on about 23,500 mi.

When the order was issued, about 22 railroads petitioned the commission for relief from all or certain portions of the requirements. Hearings were held by the commission during the latter part of 1947 and the first half of 1948, but as this was written no decisions have been issued. Some railroads, therefore, may have been awaiting final decisions on the petitions before proceeding with the installation of certain types of signaling. In some instances, these delays may have

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The systems of modern signaling now available and which have been installed in recent years on several railroads were discussed in detail in an editorial entitled, "The Responsibility of Management in the Choice of New Signaling," in the June 26, 1947, *Railway Age*. In brief, the trends are to install centralized traffic control rather than conventional automatic block because C.T.C. provides for train operation by signal indication. This saves numerous train delays as compared with operation by timetable and train orders—a practice which has to be continued if only automatic block signaling is installed—and on single-track lines which handle fairly heavy traffic (25 or more trains daily) new projects on most roads consist of complete centralized traffic control, including power switch machines and signals at the sidings under the control of the dispatcher.

Prior to 1947 the railroads had installed signaling on many lines which handle a considerable volume of traffic. The lines not now signaled, to which the I.C.C. order applies, are for the most part handling what may be considered as a medium volume of traffic. Accordingly, in the projects being planned in compliance with the order, some roads may hesitate to install systems including train operation by signal indication because of the increased first cost as compared with conventional automatic block. Under these circumstances, several roads are "cutting the cloth," as required, to attain the important objective of train operation by signal indication.

### Extension of C. T. C. and Cab Signaling

A general conclusion, therefore, is that some form of centralized traffic control, rather than conventional automatic block, can be justified on the major portion of the approximately 20,000 mi. of track on which a block system must be installed within the next four years to comply with the order of the I.C.C.

Train-stop is a signal system which automatically applies the brakes on a train if the engineman fails to observe a wayside signal displaying a restrictive aspect, such as "red" or "yellow." Such train-stop systems are now in service on approximately 12,268 track miles, of which about 11,475 mi. employ the intermittent inductive type, 283 mi. the intermittent ramp type, and 491 mi. the continuously-controlled type. Train-control is a term applied to a system including a speed-measuring device so that the brakes are applied automatically unless the engineman takes action to reduce the speed corresponding to ranges of restrictive signal aspects. Such train-control systems, all of which are controlled continuously, are in service on sections of five roads totaling 1,854 track miles. Thus, systems including automatic brake application total 14,122 track miles.

Cab-signaling is a system which displays, in the cabs of locomotives, aspects that in general are controlled the same as wayside signals, but does not include means for applying the brakes. Such cab-signaling systems are in service on 6,624 track miles. As of January 1, 1948, then, about 20,747 track miles were equipped with train-stop, train-control or cab-signaling, and similar systems must be installed on approximately 23,000 additional miles within the next few years.

### What Was Done in 1948

Since the release of the Interstate Commerce Commission order in June, 1947, only a few railroads have actually installed any train-stop, train-control or cab-signaling. The Milwaukee, which made no petition for relief from compliance with the order, proceeded during 1948 to add wayside cab-signal controls to existing wayside signaling on 53 mi. between Mayfair, Ill., and Sturtevant, Wis., and on 79 mi. between Brookfield, Wis., and Portage.

On the Atlantic Coast Line, old semaphore automatic block signaling was in need of complete replacement. Accordingly, new light signals and new coded track circuits are being installed; the 109-mi. section between Richmond, Va., and Whitakers, N. C., having been completed in 1948. On this division, therefore, the Atlantic Coast Line already has the wayside controls not only for wayside signals, but also for cab signaling when equipment is installed on the locomotives.

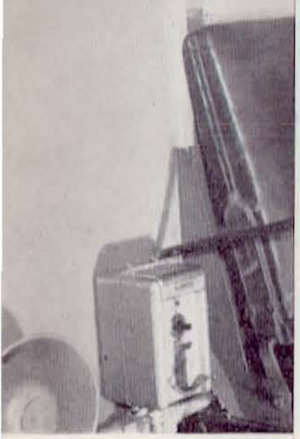
During 1948 the Union Pacific, in connection with existing automatic block signaling, installed wayside controls for continuous automatic cab-signaling on 116 mi. of double track between Laramie Wyo., and Rawlins. This project consisted primarily of replacing conventional d.c. neutral track circuits with coded track circuits. This installation is the first section of a project of continuous coded cab-signaling on 992 mi. of double track between Omaha, Neb., and Ogden, Utah, that includes replacement of an earlier form of cab-signaling control which has been in service for years on 225 mi. of double track between North Platte, Neb., and Cheyenne, Wyo.

About 187 locomotives were previously equipped for cab-signal operation in the North Platte-Cheyenne territory.

### More Yards with Retarders

Car retarders, as a means of improving operations in classification yards, were developed in 1924 and 1925. About 30 large yards were equipped with retarders in 1926 to 1930, inclusive. During the depression, World War II, and the early postwar period (1931 and 1947 inclusive), projects including retarders were limited to a total of 16 yards. Finally, in 1947 and 1948, when railroad managements could again consider large-scale improvements on a long-term basis, renewed attention was given to car retarder projects, with the result that four yards including retarders were completed in 1948. Also, two more retarder yards are now under construction in the vicinity of Kansas City—one on the Rock Island and the other on the Santa Fe—and the Canadian Pacific has made plans for and proceeded with preliminary construction of a large yard to include retarders near Montreal.

It is evident that new signaling installations will continue for several years at a rate to be limited primarily by the capacity of the manufacturers to produce equipment, and the ability of the railroads to secure trained men for planning and constructing the installations.



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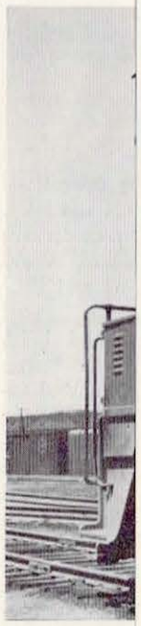

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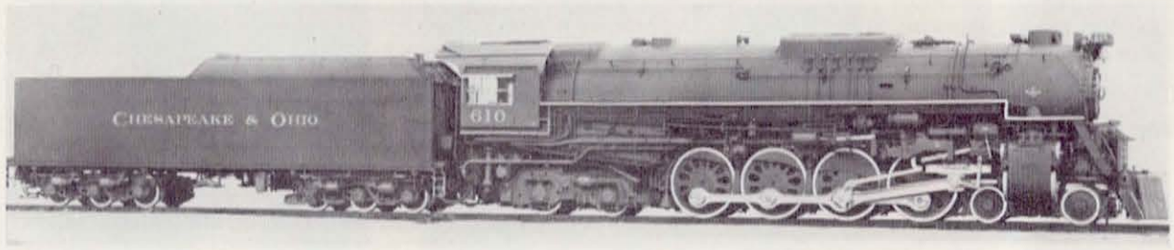
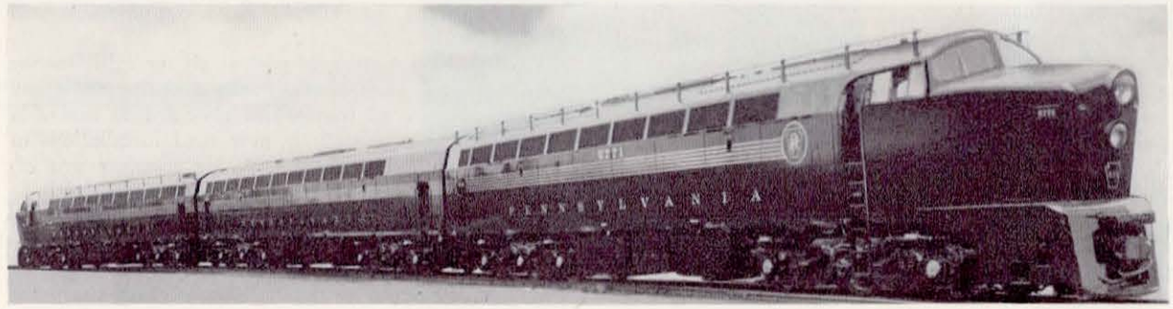
# FUEL AND FUTURE MOTIVE-POWER SELECTION




Above—One of five locomotives built by Lima Locomotive Works. Tractive force with booster, 80,700 lb. Driving-wheel diameter, 72 in. Below—Pennsylvania 6,000-hp. Diesel-Electric locomotive built by Baldwin Locomotive Works

As 1948 passes into history, three things stand out with respect to motive power. There are ten million horsepower in Diesel locomotives either in service or on order, and most new locomotives bought and placed in service were of this type. Steam locomotives still comprise over 84 per cent of the motive-power inventory and do the majority of work in all classes of railroad service. The first gas-turbine locomotive is on the rails undergoing tests and is the big unknown in the types of locomotives to come.

To say which of the competing forms of motive power will best serve the railroads tomorrow is somewhat analogous to deciding whether roller skates, skis or water wings are most useful. Each has merits and is superior to the others under certain conditions. With motive power there are a number of factors which will govern future selection. Initial cost, operating characteristics, maintenance cost, availability, opportunity for utilization, terrain over which the locomotive will be used, and fuel costs have been principal factors in past selections of the type of power purchased. Will these continue to be the most important considerations in purchasing decisions? Or will new factors assume primary importance, and what will these factors be?

### *Fuel the Probable Key*

Fuel may well be the key to the selection of future motive power. The relative cost, quality and availability of coal, Diesel oil and residual fuel oil seem destined to play a continually increasing role in deciding what type of locomotives railroads will buy in the foreseeable future. The situation is affected by economic and national-security considerations—and is one which must be examined carefully in the light of known facts for predicting future policy.

While today's fuel situation is reason for neither optimism nor pessimism, its critical importance calls for analysis, speculation and the answers to a number of questions. Turning first to the liquid fuels used in Diesel-electric and oil-burning steam locomotives, the present consumption of Diesel fuel oil by the railroads is approximately 60 thousand barrels per day while the amount of heavy fuel oil consumed by oil-burning steam locomotives is about five times this amount on a volume basis. The total amount of crude oil production from which the supplies of these two types of fuel are drawn is about six million barrels a day.

Each of these two types of locomotives performs about the same amount of work—a little under 20 per cent of the total work done.

On the basis of volumes of oil consumed, the Diesel locomotive performs an amount of work equal to that done by the oil burner on a little less than one-quarter as much fuel. The product of the distillation of the same amount of crude oil, however, is required to perform a given amount of work whether done by Diesel or oil-burning steam power. This is because the two different types of fuel are comparable neither on characteristics nor available production volume. Under present refining methods there is produced from a given amount of crude oil about four times as much

been beneficial because an opportunity has been available to broaden the studies applying to proposed projects.

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### Extension of C. T. C. and Cab Signaling

A general conclusion, therefore, is that some form of centralized traffic control, rather than conventional automatic block, can be justified on the major portion of the approximately 20,000 mi. of track on which a block system must be installed within the next four years to comply with the order of the I.C.C.

Train-stop is a signal system which automatically applies the brakes on a train if the engineman fails to observe a wayside signal displaying a restrictive aspect, such as "red" or "yellow." Such train-stop systems are now in service on approximately 12,268 track miles, of which about 11,475 mi. employ the intermittent inductive type, 283 mi. the intermittent ramp type, and 491 mi. the continuously-controlled type. Train-control is a term applied to a system including a speed-measuring device so that the brakes are applied automatically unless the engineman takes action to reduce the speed corresponding to ranges of restrictive signal aspects. Such train-control systems, all of which are controlled continuously, are in service on sections of five roads totaling 1,854 track miles. Thus, systems including automatic brake application total 14,122 track miles.

Cab-signaling is a system which displays, in the cabs of locomotives, aspects that in general are controlled the same as wayside signals, but does not include means for applying the brakes. Such cab-signaling systems are in service on 6,624 track miles. As of January 1, 1948, then, about 20,747 track miles were equipped with train-stop, train-control or cab-signaling, and similar systems must be installed on approximately 23,000 additional miles within the next few years.

### What Was Done in 1948

Since the release of the Interstate Commerce Commission order in June, 1947, only a few railroads have actually installed any train-stop, train-control or cab-signaling. The Milwaukee, which made no petition for relief from compliance with the order, proceeded during 1948 to add wayside cab-signal controls to existing wayside signaling on 53 mi. between Mayfair, Ill., and Sturtevant, Wis., and on 79 mi. between Brookfield, Wis., and Portage.

On the Atlantic Coast Line, old semaphore automatic block signaling was in need of complete replacement. Accordingly, new light signals and new coded track circuits are being installed; the 109-mi. section between Richmond, Va., and Whitakers, N. C., having been completed in 1948. On this division, therefore, the Atlantic Coast Line already has the wayside controls not only for wayside signals, but also for cab signaling when equipment is installed on the locomotives.

During 1948 the Union Pacific, in connection with existing automatic block signaling, installed wayside controls for continuous automatic cab-signaling on 116 mi. of double track between Laramie Wyo., and Rawlins. This project consisted primarily of replacing conventional d.c. neutral track circuits with coded track circuits. This installation is the first section of a project of continuous coded cab-signaling on 992 mi. of double track between Omaha, Neb., and Ogden, Utah, that includes replacement of an earlier form of cab-signaling control which has been in service for years on 225 mi. of double track between North Platte, Neb., and Cheyenne, Wyo.

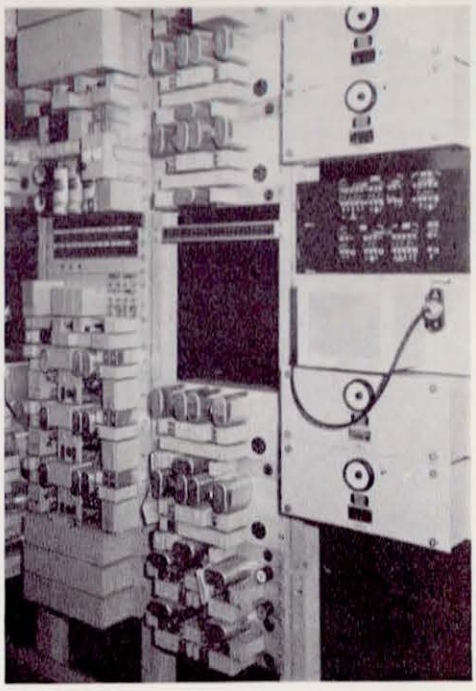
About 187 locomotives were previously equipped for cab-signal operation in the North Platte-Cheyenne territory.

### More Yards with Retarders

Car retarders, as a means of improving operations in classification yards, were developed in 1924 and 1925. About 30 large yards were equipped with retarders in 1926 to 1930, inclusive. During the depression, World War II, and the early postwar period (1931 and 1947 inclusive), projects including retarders were limited to a total of 16 yards. Finally, in 1947 and 1948, when railroad managements could again consider large-scale improvements on a long-term basis, renewed attention was given to car retarder projects, with the result that four yards including retarders were completed in 1948. Also, two more retarder yards are now under construction in the vicinity of Kansas City—one on the Rock Island and the other on the Santa Fe—and the Canadian Pacific has made plans for and proceeded with preliminary construction of a large yard to include retarders near Montreal.

It is evident that new signaling installations will continue for several years at a rate to be limited primarily by the capacity of the manufacturers to produce equipment, and the ability of the railroads to secure trained men for planning and constructing the installations.

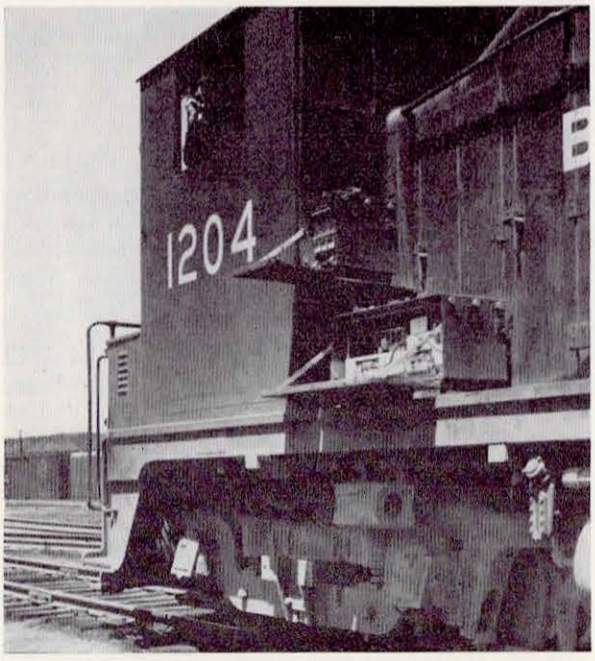
Train communication installations enable instant contact at any time between the head and rear ends of trains, between trains and wayside offices and between trains in radio range. Here a freight conductor is shown talking from caboose cupola to the engineman on the locomotive



With carrier equipment, many new telephone and telegraph circuits may be superimposed upon existing line circuits without adding new wire

# AN EXCELLENT YEAR IN COMMUNICATIONS

***Much progress made in the installation of new railroad telephone, telegraph and other modern facilities during 1948 — Prospects for 1949 are good***




Radio-equipped switching locomotives permit two-way conversation at any time between the engineman and yardmaster and enginemen of other equipped locomotives. Radio apparatus on this locomotive, directly ahead of the cab, is shown with the equipment cases open

By MAURICE PEACOCK
Associate Editor—Signaling and Communications

A splendid showing in communications construction as a whole was made by the railroads in the United States and Canada during 1948. With few exceptions, there were large increases over 1947 in practically every phase of the field. This trend was undoubtedly due to realization more than ever of the importance of modern communications facilities as an aid in increasing overall railroad operating efficiency, providing better service to passengers and shippers and, concurrently, reducing operating and maintenance costs. Based on the results, the outlook for the coming year is good.

As indicated elsewhere in this issue, there was a substantial increase in the construction of new and rebuilt railroad-owned telegraph and telephone pole lines. The reason for this trend is that many of the pole-line contracts between the railroads and the Western Union Telegraph Company are being terminated, and the lines turned over to the railroads for operation and maintenance. Western Union, in the meantime, is adopting radio for transmission of its message and

other traffic between distant points. For the same reason, the amount of construction of new and rebuilt commercially owned pole lines was down slightly, compared with 1947. On the other hand, a large increase was noted with respect to jointly owned lines as a whole. This was influenced primarily by work on the Canadian roads; otherwise, in the United States, there was a substantial decrease in the amount of new or rebuilt jointly owned lines.

### Big Increase in New Copper Wire

A tremendous increase was noted in new copper wire installed on railroad-owned pole lines. The total figure, however, was influenced largely by work on four or five roads in the United States and Canada. There was a slight increase in the amount of new copper wire installed on commercially owned lines, although this was effected primarily by the Canadian roads. There was a decrease, insofar as the roads in the United States are concerned.

During 1948 the railroads continued at a high level their installation of new long-distance telephone circuits to provide increased service between distant cities. Increased operating efficiency and better service to patrons of the railroads have resulted. There was a big increase in telegraph circuit mileage, but a large drop from 1947 in the installation of new printing telegraph circuits. A substantial decrease was also noted in new carrier circuit mileage, wherein additional circuits are superimposed upon existing line wires. This was probably because of the completion the year previous of a lot of work carried over from the war years, due to the unavailability of equipment, which was going to the armed forces.

There was a large increase in the number of loudspeakers installed in yards and terminals in 1948—undoubtedly because the roads realize the importance to themselves and to the shippers of getting trains through yards in a minimum of time—and the outlook for the future is good.

### F.C.C. Proposals Rapped

Important among railroad radio communication activities in 1948 was the strong opposition of the Association of American Railroads, the railroads and the radio equipment manufacturers to the Federal Communications Commission's pending rule-making proposals, which include a plan to take from the railroad radio services 19 of the 60 frequencies now allocated to them in the 152-162-mc. band. This opposition was vigorously voiced by the parties concerned in oral argument before the commission during the weeks of October 3-16, 1948. (The proceedings were reported on pages 71 and 81 of the October 9 and October 16 issues, respectively, of *Railway Age*.)

An early decision by the commission is expected in this important proceeding. The F.C.C. proposes to supplant the present General Radio Service with three new classes of mobile service as follows: (1) Land Transportation Radio Services—to provide communication facilities for railroads, intercity buses and trucks and urban transit services; (2) Domestic Public Mobile Radiotelephone Services—to furnish common carrier mobile radiotelephone service to the general public; and (3) Industrial Radio Services—for miscellaneous use, such as delivery and pick-up services, automobile clubs, doctors' cars or ambulances. The commission further proposes to assign the 19 frequencies it plans to take from the railroads to a new Public Safety Radio Service to be set up under a proposed revision of rules governing what has been called Emergency Radio Services. The reassignment is designed to make up for that service's loss of spectrum space to the Maritime Mobile Service.

### Road Train Communication Steps Up

The construction of inductive and radio communications in yards continued in 1948, although the number of locomotives and fixed stations equipped was below 1947. The figures probably would have been higher, but some roads undoubtedly hesitated because of uncertainty as to the F.C.C.'s actions on the proposed reassignment of frequencies. Also, considerable development work on railroad radio equipment is still in store.

Despite these factors, as well as all the criticism the railroads have taken "for not fully adopting radio and making full use of frequencies allocated to them," a good showing was made in new road installations of radio and inductive systems. A big increase was effected over 1947, which is evidence that the roads as a whole realize the importance of every minute which can be saved between stations and terminals by the use of radio. The number of installations probably would have been even higher if more roads were certain as to F.C.C. plans, and they had a green light on which to proceed.

### Good Returns on Investments

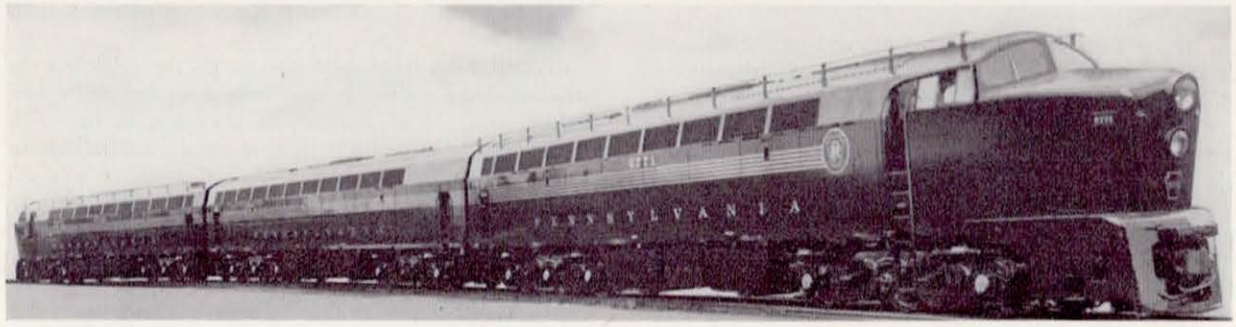
With respect to the benefits of inductive and radio communications in yards and on the road, the economics revealed by two roads during the past year, pertinent to installations on their roads, are of considerable interest. One southwestern railroad, for example, has a road train communication installation on 193 mi. of single track, which involves equipment in seven wayside offices, 15 freight locomotives and 15 cabooses, using inductive equipment for train-to-wayside communication and space radio equipment for end-to-end communication. The total cost of the job was $96,000, with an estimated annual maintenance expense of $14,000 and interest and depreciation of $13,440—a total annual charge of $27,440. The annual savings are estimated at $65,921 gross, and $38,481 net—about 40 per cent of the initial investment.

A midwestern road has an installation of space radio on one steam and 21 Diesel-electric yard locomotives. From a six-month study of this installation, a five to six per cent increase in the productivity of the radio-equipped locomotives was disclosed. The cost of equipping each locomotive was less than two per cent of the actual value of the locomotive.

As explained elsewhere in this issue, there was an increased tendency to install public address apparatus, telephones and musical entertainment on trains. The purpose of these facilities is to engender good will among passengers and make their journeys, particularly on long-distance runs, as pleasant as possible.

# FUEL AND FUTURE MOTIVE-POWER SELECTION

Above—One of five locomotives built by Lima Locomotive Works. Tractive force with booster, 80,700 lb. Driving-wheel diameter, 72 in. Below—Pennsylvania 6,000-hp. Diesel-Electric locomotive built by Baldwin Locomotive Works




As 1948 passes into history, three things stand out with respect to motive power. There are ten million horsepower in Diesel locomotives either in service or on order, and most new locomotives bought and placed in service were of this type. Steam locomotives still comprise over 84 per cent of the motive-power inventory and do the majority of work in all classes of railroad service. The first gas-turbine locomotive is on the rails undergoing tests and is the big unknown in the types of locomotives to come.

To say which of the competing forms of motive power will best serve the railroads tomorrow is somewhat analogous to deciding whether roller skates, skis or water wings are most useful. Each has merits and is superior to the others under certain conditions. With motive power there are a number of factors which will govern future selection. Initial cost, operating characteristics, maintenance cost, availability, opportunity for utilization, terrain over which the locomotive will be used, and fuel costs have been principal factors in past selections of the type of power purchased. Will these continue to be the most important considerations in purchasing decisions? Or will new factors assume primary importance, and what will these factors be?

### *Fuel the Probable Key*

Fuel may well be the key to the selection of future motive power. The relative cost, quality and availability of coal, Diesel oil and residual fuel oil seem destined to play a continually increasing role in deciding what type of locomotives railroads will buy in the foreseeable future. The situation is affected by economic and national-security considerations—and is one which must be examined carefully in the light of known facts for predicting future policy.

While today's fuel situation is reason for neither optimism nor pessimism, its critical importance calls for analysis, speculation and the answers to a number of questions. Turning first to the liquid fuels used in Diesel-electric and oil-burning steam locomotives, the present consumption of Diesel fuel oil by the railroads is approximately 60 thousand barrels per day while the amount of heavy fuel oil consumed by oil-burning steam locomotives is about five times this amount on a volume basis. The total amount of crude oil production from which the supplies of these two types of fuel are drawn is about six million barrels a day.

Each of these two types of locomotives performs about the same amount of work—a little under 20 per cent of the total work done.

On the basis of volumes of oil consumed, the Diesel locomotive performs an amount of work equal to that done by the oil burner on a little less than one-quarter as much fuel. The product of the distillation of the same amount of crude oil, however, is required to perform a given amount of work whether done by Diesel or oil-burning steam power. This is because the two different types of fuel are comparable neither on characteristics nor available production volume. Under present refining methods there is produced from a given amount of crude oil about four times as much

By G. J. WEIHOFEN
Associate Editor

***Fuel economics seem destined to be the cornerstone of tomorrow's choices of locomotive types — Significant facts related to the fuel situation must be considered in deciding what the choices may be***

Electro-Motive F-3 type three-unit locomotive with restyled cabs

of the heavy residual fuel oil as there is of the high-grade light Diesel fuel oil, depending somewhat upon the specifications of the Diesel oil. Conversion from oil-burning steam power to Diesel-electric locomotives will not, therefore, make an appreciable reduction in the amount of crude oil required to be refined for doing a given amount of railroad work unless affected by some change in conditions which will make feasible a different ratio between the amounts of the two fuels produced. The oil-burning gas-turbine locomotive, if successful, does offer some possibility for reducing the amount of crude necessary for refinement to perform a given amount of railroad work because it will burn the comparatively abundant heavy oil at a higher efficiency than the oil-burning steam locomotive.

### Diesel Fuel Quality vs. Quantity

Among the possibilities for increasing the amount of railroad Diesel fuel available in a given amount of crude-oil stock is the relaxation of Diesel fuel specifications. One producer estimates that at the expense of other petroleum products the following increases can be made in the production of Diesel fuel from a specified amount of crude: (1) 45 per cent increase of 50-cetane-number provided the flash could go to 120 deg. F. and the sulphur to 1.0 per cent; (2) 80 per cent increase of 150-deg. F. flash and 0.5 sulphur if the cetane could be dropped to 35; (3) 130 per cent increase of 150-deg. F. flash if the sulphur could go to 1.0 per cent and the cetane to 35; and (4) 220 per cent increase if the flash could go to 120 deg. F., the sulphur to 1.0 per cent and the cetane number to 35.

If any of these modifications can be made economically and without adverse effect on Diesel maintenance, operation or availability, it may offer a practical solution to the problem of meeting the continually increasing needs for fuel oil. A flash point of 120 deg. may be satisfactory; it has been used in kerosene, and kerosene or blends thereof have been used satisfactorily in bus and truck Diesels. But before full reliance can be placed on such a procedure several questions will have to be answered.

Where the additional Diesel fuel is obtained at the expense of residual fuel oil, how much will the cost of production rise? Where it is done at the expense of home-heating oils, will the railroads, with their large requirements, be willing to bid against the price the individual home owner, with his comparatively small consumption, is willing to pay? Where this may be done at the expense of kerosene or gasoline, will the railroads be in a position to compete on a price basis with the government for the latter's requirements for kerosene and other blends of fuel for jet-propelled planes and gasoline for piston-engine planes, and for truck, bus and automobile gasoline against the millions of owners of these highway vehicles?

In the event of war or a worsening of the international situation, what will be the Diesel fuel-oil requirements for the armed forces? If, for the first six months of 1948, the Navy, while on a strictly peacetime stand-by basis, used over 7.5 million barrels of

Diesel fuel oil, or approaching as much as the railroads, how much will that service's requirements expand in an emergency? How much will an emergency reduce our imports and how much increase our exports?

### Synthetic Liquid Fuels

The consensus among leading authorities on petroleum and synthetic liquid fuels indicates that natural petroleum products will have to be the chief source of oil supply for several decades. Natural gas is the most likely immediate source of synthetic liquid fuels. Assuming a supply of gas available and ready for delivery to the plants, the cost of a plant to produce liquid petroleum from natural gas is currently estimated to range from $2,500 to $4,000 per daily barrel of liquid petroleum.

To produce a million barrels a day of petroleum synthetically—less than one-fifth of current peacetime needs—would require an investment of multiple billions of dollars. With sufficient economic urge, enough construction materials and manpower, and an atmosphere of peace in which to work, such a development could occur over a period of years. In time of war it would be extremely difficult in the face of other demands on manpower, construction materials and transportation.*

Liquid fuels can be synthesized from coal as well as from gas, but not as rapidly or as cheaply. The process would require the opening of new mines, and employing miners yet to be trained. To produce a million barrels of oil a day from coal by present methods would require the erection of plants costing some five billion dollars. Their coal consumption would be about 650,000 tons a day or 236 million tons per year. The cost of opening new mines is estimated at five to eight dollars per annual ton, which would add another billion or more dollars to the estimated cost. To produce all of the country's present demand for petroleum products from bituminous coal would require twice as much bituminous coal as was mined in 1941.

The use of sub-bituminous coal has been advocated to get raw materials more cheaply and without competing with other uses for bituminous coal. Authorities caution against relying on this source for synthetic liquid fuels until more and better data are available on the feasibility of producing the large quantities of sub-bituminous coal economically in terms of manpower, housing, transportation and equipment.

The prospect of obtaining large quantities of oil from shale and tar sands is considered slightly more remote than from synthesis. Extraction processes are solvable, and plant construction costs not excessive, but the mining and handling of the great quantities of materials might create more serious manpower problems.

The quantities of synthetic fuel expected to become available through normal peacetime development in the next few years will seem very large when measured by the technological achievement involved, and it will give by far the greatest volume of synthetic product ever produced. But measured in terms of total liquid fuel requirements, the synthetic fraction produced is apt to be small for several decades.

The coal situation can be summed up briefly by saying that the supply is plentiful but the quality often poor. Whether this latter characteristic is due to the coal producers' unwillingness to give the railroads good coal or the railroads' unwillingness to pay enough for good coal depends upon whether the opinion is that of a railroad man or a coal man. Despite this seeming predicament, the outlook for using coal of a type from which good performance can be obtained is better for two reasons than it has been since before the war.

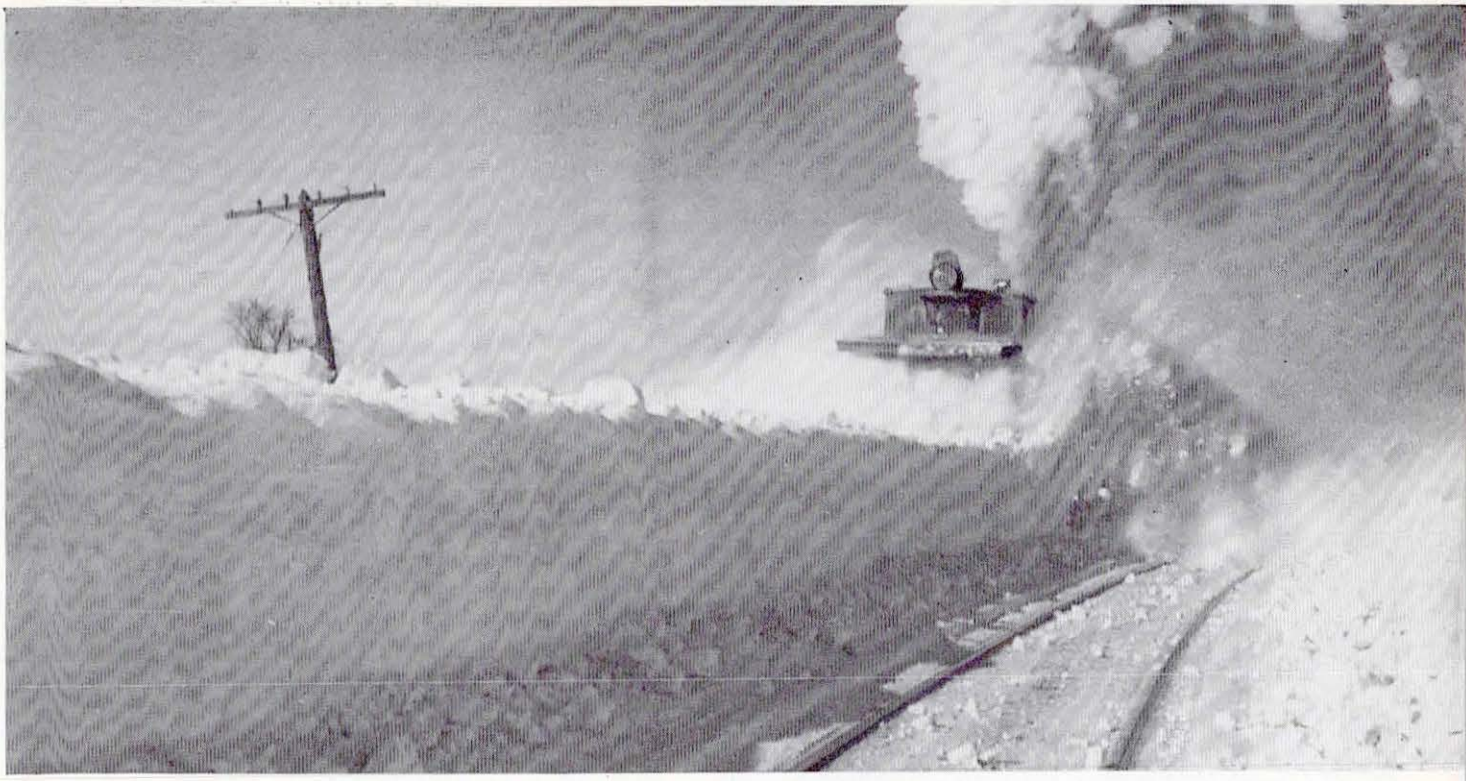
### Solid Fuel

First, supply has caught up with demand to the extent that some mines are reducing the work week. Abundance of coal will eliminate inferior grades from the market, and make it possible for the railroads to become increasingly selective in the types of coal they wish to burn. One large railroad recently succeeded in buying a 30-day supply of egg coal for one heavy-density division. If the trend toward a buyers' market which seems apparent today continues unhampered by interruptions to production or restrictions on output, good grades of coal will be available to the railroads, and at a small enough price differential over mine run to justify the improved performance that will result.

The second reason for expecting better coal to be used is the increased interest being shown by railroad men in deciding what types of coal are best suited for locomotive operation and in getting those grades of coal. Greater use of sized coal may also be expected as a result of tests; one series showed that 95 lb. of mine run were burned per 1,000 gross-ton-miles compared to 66 lb. of sized coal. Benefits that may be obtained from using double-screened coal are further indicated by the test results quoted by Earl C. Payne, consulting engineer of the Pittsburgh Consolidation Coal Company, in an address before the New York Railroad Club wherein he said, in part:

"Eight of the eastern railroads are now using double-screened coal on their road locomotives and several of them have decided to buy every ton of it they can get in the present market. These roads now using egg coal have factual information showing improvement in the range of from 6 to 20 per cent in better evaporation, higher capacity and improved boiler efficiency. These bare facts show more than enough to pay the additional cost of egg coal for both on-line and off-line railroads. . . . Better quality and better preparation improves smoke performance, reduces stack emission, reduces maintenance, increases reliability, and improves availability. These intangible factors, in which the steam locomotive has been deficient in its competition with the Diesel locomotive, have also in some measure been responsible for the Diesel preference when purchasing new motive power. Better coal on a modern steam locomotive will give a cost and performance that is quite comparable with the best Diesel locomotives available. Therefore, if better locomotive fuel is used by the railroads, then the outlook for coal is good. If they continue the purchase of unsuitable coal, the outlook is not at all promising."

* Facts and figures on synthetic oil possibilities taken from a paper entitled, "Petroleum's Relationship to National Security," by Bruce K. Brown, vice-president, Standard Oil Company of Indiana and president, Pan American Petroleum Corporation.



# CANADIAN ROADS FIND THE GOING TOUGH

By OUR CORRESPONDENT AT OTTAWA

***With all-time record business, net earnings were the lowest for many years—Substantially improved properties and large purchases of equipment indicate their continued faith in the future***

In 1948 the Canadian railways established new records in freight handling and in gross receipts, and all of this in the face of rapidly mounting labor and material costs, a nationwide political battle against higher freight rates, and a steady refusal by the provincial governments even to try to achieve uniformity of regulations for truck operation.

For the first time in history revenue carloadings in Canada passed the 4,000,000 mark in 1948, a gain of about 50,000 over 1947. A vast improvement in means for handling freight cars, expediting loading and unloading and speeding operations in terminal yards, have made this possible. Revenue loadings showed increases in most of the principal commodities, the largest gains being in grain and grain products, ores and concentrates, brick and cement, pulpwood, woodpulp and paper, and there was a notable advance in l.c.l. merchandise loadings.

The "box office" showing of both the Canadian Pacific and the Canadian National was impressive last year. Final figures from both roads will not be available for another month or two but it is estimated that Canadian National operating revenue for 12 months of 1948 was about $492,000,000, a gain of $54,000,000 over 1947, while operating expenses were approximately $66,000,000, a gain of $69,000,000. Canadian Pacific operating revenue for the year's first ten months was $290,039,997, an increase of $27,294,371 over the same 1947 period, but expenses were $278,553,585, an increase of $31,621,762 for the same ten months, or a decrease in net earnings for that period of $4,327,391.

Another important stage in the long and bitter political battle against higher freight rates will be reached on January 11 when the Board of Transport Commissioners opens at Ottawa its hearings on the application of the railways for a permanent boost of 20 per cent. This proceeding will mark the opening of the third year in the fight of seven of the provincial governments against financial relief for the

railways by way of a freight rate increase. The central provinces—Ontario and Quebec—which are highly industrialized and also the principal taxpayers, are standing on the side lines and preserving a semblance of neutrality.

On March 30, 1948, the Transport Commission issued its order awarding the railways a general rate increase of 21 per cent, the railways having asked for 30 per cent. Exceptions made the net overall increase about 15 per cent. That decision followed hearings which occupied the entire year of 1947. Soon after the March 30 decision the railway unions put on a fight for a substantial wage increase, and finally won much of their demands, their victory of course boosting the operating expenses of the railways. To offset this the railways promptly made another freight rate increase application, the one now under consideration, for an interim increase of 15 per cent and a permanent rise of 20 per cent (the interim feature recently was dropped by the C.P.R.).

Soon after the provinces disclosed their objections to the 21 per cent freight rate increase award, early in April, 1948, the federal cabinet directed the Transport Board to make a thorough probe of the railway rates structure with a view to establishing a fair and reasonable structure which would be equal in its application to all persons and localities, subject to such legal provisions as affect freight rates. Then, to meet other provincial protests, the government on July 1, 1948, retired Col. James A. Cross, Chairman of the Transport Commission and named in his place Justice Maynard Archibald of Halifax. In the middle of September the government made known its intention to establish a Royal Commission, which has just been appointed, to examine and report on questions of economic policy involved in the operation and maintenance of national transportation.

### *Regional Differential Rates*

But the "regional discrimination" issue is still a live one. Late in 1948 the Transport Commission went to the Pacific Coast to hear evidence on the Rocky Mountain differential, business and industrial interests objecting to the higher rate charged by the railways for freight haul through the mountains. Then in December, 1948, the commission returned to Ottawa where these "mountain differential" hearings were resumed. The C.P.R. contended it obtained about $3,000,000 a year in revenue from the differential tariff, and that if this were denied the railway it would simply have to seek a higher rate elsewhere to offset this loss.

The railways have fought long and hard against regional rates, insisting that if there were to be wide concessions to the special rate requests of areas all across the country freight tariffs would soon become unintelligible not only to shippers but also to carriers. There already are two or three important regional tariffs which have become statutory, embalmed in federal legislation. One is the Maritime Freight Rates Act, and the other the historic Crow's Nest Pass Agreement.

Because railway prosperity obviously is bound up with the nation's economic health the steps to be taken to prevent recurrences of last fall's serious electric power shortages in Ontario have a deep interest for the railways. The latest project to be disclosed is the $275,000,000 plan for power and navigation help from the Lachine Rapids of the St. Lawrence down to the harbor of Montreal. It would provide eventually 1,200,000 horsepower, as well as widen and deepen the Lachine Canal. It is not necessarily related to the much discussed St. Lawrence Seaway project.

The Montreal scheme, though on the face of it costly, is believed to be more possible of fulfillment than the other farther west on the St. Lawrence (in the Cornwall region), and as the federal government is now talking much about public investment to protect employment next year, which happens also to be a federal general election year, it is quite possible the Lachine Rapids-Montreal harbor scheme may be authorized. Incidentally, one phase of the project, reported on by a federal board of engineers, calls for the construction of a $19,000,000 four-track tunnel under the St. Lawrence from Montreal to the south shore at St. Lambert to carry Canadian National trains.

In reviewing developments in 1948 and the prospects for 1949, R. C. Vaughan, chairman and president of the Canadian National, summed up the situation by remarking that the government system has just concluded "one of the most trying years in its history," though its gross income reached an all-time high.

Large as this income was, it was not big enough to offset the even sharper rises in manpower and material costs. As a result, Mr. Vaughan predicted, when the final figures are available it is altogether likely that the Canadian National's net position in 1948 will prove to be the lowest since 1939. After payment of taxes, equipment rents and other charges, the 1948 net will not be sufficient to meet all the interest due on securities held by the public and owing to the government.

"Consolidation of facilities as a measure of economy proceeded at several centers. This included a new east wing to the Edmonton station and an extension to the Vancouver ticket office building. By bringing departmental offices and telegraph facilities under our own roofs at these points we were able to discontinue the payment of rents to outside agencies. Shop facilities were improved and extended at Montreal and Stratford," Mr. Vaughan continued.

"During the year, construction of the International Aviation Building adjoining the Central Station at Montreal proceeded according to schedule. Steel erection was completed during the summer and by the end of the year the building was being rapidly closed in. Work on the interior is going forward and it is expected that the building will be ready for occupancy by next July. The same month should see the completion of the steam-heating plant to serve this building, the station and ultimately the whole terminal area. Boilers will be installed in the spring.

"Progress is being made in the construction of the Barraute-Kiask Falls branch line to help in the development of the Abitibi district of northern Quebec. We expect that this line will be in operation early in 1949 to a point 39 miles north of Barraute, at the junction of the Taschereau and Bell rivers. This line will cost about $3,200,000 but it will open for settlement farm land supporting 15,000 people and the estimate of the capital wealth created by this extension is placed at $40,000,000.

### New Equipment Ordered

"In common with other railways on the continent, the Canadian National suffered from a shortage of equipment and during the past year experienced at times difficulty in meeting the demands of shippers. . . . During the year, from equipment builders, we were able to get delivery of 5,246 new box cars, 500 automobile cars, 250 gondolas, 231 refrigerators, 150 covered hopper cars, and 100 ore cars. . . . We built 50 new-type express refrigerator cars in our Transcona shops and material is being ordered for 50 more, to be delivered in 1949. Transcona is also building 369 refrigerators for freight service, for delivery this coming year. Other freight equipment on order for 1949 includes 700 box cars, 1,000 automobile cars, 500 triple hoppers, 500 gondolas, 490 flat cars and 75 tank cars. . . .

"During the past year, we received 28 de luxe first class coaches and we recently ordered another 25. We are still awaiting delivery of 20 sleeping cars of the duplex-roomette type. The railway is also remodeling in its own shops a number of sleeping cars of various types, lounge cars, parlor cars and dining cars. In all, 135 cars were modernized in our shops in 1948 and work on others will be undertaken in 1949. Ten new baggage cars and 10 mail and express cars were received."

During 1948 the Canadian Pacific, though handling a record volume of traffic, did not share to the same degree in Canadian prosperity as other major industries, said the road's president, W. A. Mather, in commenting on the effect of mounting railway wage and material costs. With only partial compensation to cover these higher charges from the freight rate increase of March, 1948, he said, the company has been placed in a critical financial position.

While gross earnings for the Canadian Pacific in 1948 reached an all-time high, expenses have climbed so rapidly that net earnings will be at one of the lowest levels in years, Mr. Mather emphasized.

"The contrast between record gross and declining net earnings places the company in a precarious position in Canadian economy," he continued.

"This condition is highlighted by the fact that in 1948 the gross earnings of the Canadian Pacific were approximately three times those of the low depression year of 1933 while the net earnings are not expected to reach the figure of that year. In other words, the company in 1948 has done three times as much work in providing vital transportation services to the nation for a net return below that of 1933. . . .

"It is no secret that our equipment situation is not as satisfactory as it should be to meet present-day traffic requirements in Canada. This is due primarily to the fact that war shortages of steel and allied products made construction impossible during those years while present financial results prohibit the volume of new construction which should otherwise take place. However, the Canadian Pacific floated a $20,000,000 equipment trust issue early in 1948, and these funds will be used to help purchase an assortment of equipment to provide improved services until the company is in an improved financial position.

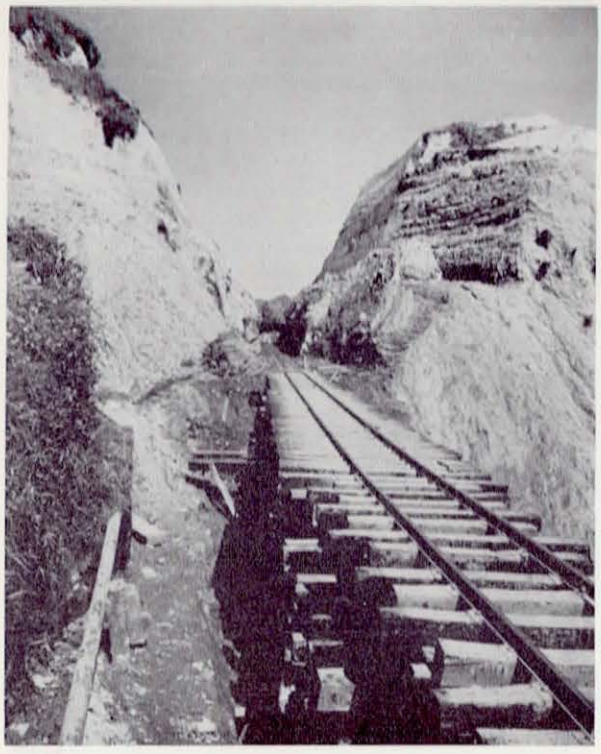
"Expenditures in 1948 for equipment were authorized as follows:

| | |
|---|---|
| 44 | Diesel switchers |
| 1,000 | box cars |
| 350 | drop-bottom gondolas |
| 350 | triple-hopper cars |
| 200 | ballast cars |
| 100 | covered hopper cars |
| 100 | steel cabooses |
| 75 | passenger coaches |
| 15 | baggage-express cars |
| 10 | mail express cars |
| 5 | room-type sleepers |

"The growing density of rail traffic in Canada, and the need for the most expeditious movement of freight traffic, has resulted in the company authorizing the expenditure of $8,000,000 for a hump retarder freight yard in Montreal. This will be the first yard of its kind in Canada and in 1948 20 miles of track were laid and good progress was made on construction of the necessary buildings. . . .

"The Canadian Pacific management is firm in its faith in the future of the company and the nation which it serves and is so integral a part," the road's president said in conclusion.

"While financial results in relation to services provided are currently disappointing the company is confident that those charged with the responsibility of formulating national transportation policy will recognize the need of the railways for increased revenues."



Daylighted tunnel on the Interoceanic line—now a division of the National Lines—which was recently converted to standard gage. Bridge in the foreground is being strengthened

# MEXICAN RAILWAYS "GO INTO RED" IN 1948

By J. M. OROZCO ESCOBOSA
Our Mexican Correspondent

***Federal government takes steps to iron out economic conflicts and strengthen management's hands, as lines show operating loss for the year — Further improvements pushed***

A comparatively slight decrease in freight and express traffic, accompanied by a heavy decline in passenger traffic and continued increases in expenses, created an unbalanced state of affairs in the finances of the National Railways of Mexico in 1948, to the extent of a 65 million peso* loss in the operation of its properties, seriously injuring the railroad's credit. This, together with other factors, prompted the federal government to take several steps — including the filing of a petition with the labor authorities covering matters in economic conflict, and the drafting of a new law, which has been approved by Congress, changing the management structure of the lines, with the view of setting up an organization somewhat similar to the corporate form and giving the board of directors authority over the general manager which it did not have before.

The new board of directors will be composed of eight members, one representing the federal Treasury Department, who will be president; one each from the Departments of Communications, Agriculture, and National Economy; one each from the Confederation of Chambers of Commerce and the Confederation of Chambers of Industry; and two representing the Mexican Railway Syndicate. Four railroad technicians — a civil engineer, an economist, a mechanical engineer and a certified public accountant — will be attached to the board as advisers.

## Management Given Freer Hand

The board will have full authority to formulate the administrative program; to approve budgets, financial reports, additions and betterments, rehabilitation projects and pensions; and to establish standards, organizations, efficiency ratings, etc. It will also establish committees on finances, budgets, working relations and regulations, and on organization and efficiency. The exception will be that the general manager will be appointed by the President of the republic, and the president of the board will have power to veto the board's decisions when he considers they are inadequate or harmful to the administration of the lines.

Besides filing the petition on economic conflict, which calls for financial reorganization and modification of some clauses of the collective labor contract which hamper good management of the railways, a presidential resolution establishes measures for the National Lines to retain the 10 per cent tax on gross income, beginning January, 1949, which amount is to be invested in the purchase of equipment and materials for the construction of new lines. This will amount to 40 to 50 million pesos a year.

An increase in freight rates was granted the National Railways, which is expected to yield 70 million pesos a year. The federal treasury was instructed to furnish the lines 65 million pesos to pay their floating debt for the year 1948, and to obtain the necessary credit to purchase modern rolling stock and motive power, and to modernize their shops.

This reorganization is being put into effect at a time when there is deep division in the ranks of the railway syndicate, but inasmuch as the changes are President Aleman's plans, there is no conflict between labor and management. The modifications, among other things, tend to reduce labor interference in management, and particularly so as regards management's authority freely to appoint officers; to operate trains on a strictly technical and economical basis; to transfer personnel wherever required; to restrict the payment of overtime; to establish a reasonable pension plan and department, and division seniority rights instead of system rights; and to make promotions based on knowledge and skill instead of on seniority alone.

*The peso today is equivalent to 14.5 cents in United States currency.

There were no changes in the executive staff, with the exception that Isaac Perez, superintendent of reclamation plant at San Luis Potosi, became general superintendent of motive power, succeeding J. Tavera, who was transferred to the assistant general manager's office. Rafael de la Fuente was appointed superintendent of the reclamation plant at San Luis Potosi, succeeding Mr. Perez.

The Interoceanic Railway, a former narrow-gage road from Mexico City to the port of Veracruz, was converted into standard gage and inaugurated as such in January, 1948. This line was purchased by the federal government from English interests, and its accounting and operating statistics were merged with those of the National Lines. This accounts for the differences in figures for 1947 as reported in the accompanying table, and as reported in this review article last year.

The narrow-gage line from Mexico City to Acambaro, via Toluca, is being converted to standard gage with 112-lb. rail. Approximately 30 per cent of the work has been finished, and it is the government's intention to convert all of the narrow-gage lines to standard gage in a term not to exceed four years.

The Sureste Railroad, from Coalzacoalcos — on the Gulf of Mexico — to Campeche, is expected to be finished in May, 1949. This road will connect the National Railways of Mexico with those of Yucatan.

Thirteen Baldwin Diesel-electric 3,000-hp. locomotives were received during 1948. This power is being used in both passenger and freight service.

## *Traffic Trends in 1948*

Gross railway earnings during the first eight months of 1948 decreased to 281,757,982 pesos, from 291,717,145 pesos in the same period of 1947, or 3.41 per cent. Freight earnings increased slightly from 195,823,962 to 195,848,842 pesos, or 0.01 per cent; passenger earnings dropped considerably from 53,770,123 to 45,421,609 pesos, or 15.53 per cent; baggage earnings decreased from 239,608 to 156,046 pesos, or 34.87 per cent; express earnings increased from 23,391,221 to 23,482,205 pesos, or 0.39 per cent; telegraph earnings increased from 23,943 to 31,656 pesos, or 32.21 per cent; and miscellaneous earnings decreased from 12,737,572 to 11,428,828 pesos, or 10.27 per cent. Total operating earnings decreased from 285,986,430 to 276,369,185 pesos, or 3.36 per cent, and other than operating earnings dropped from 5,730,715 to 5,388,797 pesos, or 5.97 per cent.

Total railway expenses during the first eight months of 1948, compared with the same period of 1947, increased from 338,439,293 to 346,904,012 pesos, or 2.5 per cent. An increase of 1,545,689 pesos was registered in the expenditures of the transportation department, primarily because of a raise in the price of fuel; general expenses increased 3,016,105 pesos, and other than operating expenses increased 4,026,335 pesos, due mostly to increases in per diem payments—not because of a greater number of foreign cars on line, but due to increase in the per diem rate from $1.50 to $2.05.

The decrease of 3.41 per cent in railroad earnings and the increase of 2.5 per cent in expenses resulted in a loss of 65,146,029 pesos in operation, and produced an operating ratio of 123.12 per cent, compared with a ratio of 116.02 reported by them in 1947.

**SELECTED OPERATING STATISTICS (FIRST 8 MONTHS 1948-1947)**

| | 1948 | 1947 | Inc. or Dec. | Per cent change |
|---|---|---|---|---|
| Locomotive klms. | 31,019,857 | 31,889,841 | —869,984 | 2.7 |
| Freight train klms. | 12,809,910 | 13,189,516 | —379,606 | 2.9 |
| Passenger train klms. | 7,851,986 | 7,804,044 | +47,942 | 0.6 |
| Mixed and spec. klms. | 3,225,813 | 3,231,904 | —6,091 | 0.2 |
| Non-revenue train klms. | 201,769 | 272,201 | —70,432 | 25.9 |
| Total train klms. | 24,089,478 | 24,497,665 | —408,187 | 1.7 |
| Passenger car klms. | 67,162,857 | 71,739,908 | —4,577,051 | 6.4 |
| Frt. loaded car klms. | 191,381,089 | 194,432,683 | —3,051,594 | 1.6 |
| Frt. empty car klms. | 93,039,595 | 95,290,652 | —2,251,057 | 2.4 |
| Total frt. car klms. | 284,420,684 | 289,723,335 | —5,302,651 | 1.8 |
| Net ton-klms. (1,000s) | 5,795,184 | 5,917,375 | —122,191 | 2.1 |
| Gross ton-klms. (1,000s) | 12,548,846 | 12,789,959 | —241,113 | 1.9 |
| Total number cars loaded | 343,651 | 354,490 | —10,839 | 3.1 |
| Net ton klms. per train klm. | 425 | 421 | +4 | 1.0 |
| Gross tons per train klm. | 874 | 865 | +9 | 1.0 |
| Speed per hr. (klms.) frt. | 19.7 | 19.5 | +0.2 | 1.0 |
| Gross ton-klms. per train hr. | 17,236 | 16,893 | +343 | 2.0 |
| Frt. locomotive klms. daily | 167 | 174 | —7 | 4.0 |
| Liters oil per 1,000 g.t. klms. frt. | 50.6 | 52.4 | —1.8 | 3.4 |
| Per cent loaded car klms. to total | 67.3 | 67.1 | +0.2 | 0.3 |
| Car klms. per car daily | 47.5 | 49.0 | —1.5 | 3.1 |
| Net tons per car | 30.3 | 31.7 | —1.4 | 4.4 |
| Cars on line daily | 24,528 | 24,353 | +175 | 0.7 |
| Klms. line operated | 13,343 | 13,342 | +1 | .. |

**Loaded Cars Interchanged—9 Months**

| | Imports | | Exports | |
|---|---|---|---|---|
| | 1948 | 1947 | 1948 | 1947 |
| Laredo | 15,254 | 16,199 | 6,770 | 6,930 |
| El Paso | 3,074 | 3,765 | 3,222 | 4,300 |
| Eagle Pass | 2,935 | 3,302 | 1,655 | 1,380 |
| Brownsville | 3,103 | 2,886 | 3,501 | 4,986 |
| Totals | 24,366 | 26,152 | 15,148 | 17,596 |

**Trend of Traffic—7 Months**

| Commodity | 1948 tons | 1947 tons |
|---|---|---|
| Forest products | 321,734 | 386,553 |
| Agricultural products | 2,546,846 | 2,529,751 |
| Animals and animal products | 128,431 | 103,218 |
| Inorganic products | 4,243,954 | 4,452,759 |
| General merchandise | 941,785 | 953,030 |
| Totals | 8,182,750 | 8,425,311 |

The number of net tons transported decreased from 8,425,311 in the first seven months of 1947 to 8,182,750 in the same period of 1948, but the total decrease corresponds closely to the decrease in inorganic products handled, which pay a comparatively low rate. This explains the fact that, in spite of an overall decrease in net tons handled, there was a slight increase in freight earnings.

Gross ton-kilometers in the first eight months of 1948, compared with the same period of 1947, decreased 241,113,000, or 1.9 per cent. Freight train-kilometers decreased 379,606, or 2.9 per cent, while net ton-kilometers decreased 122,191,000, or 2.1 per cent, which brought about an increase from 421 to 425 the net ton-kilometers per train-kilometer. There was a decrease from 354,490 to 343,651 cars loaded, notwithstanding the fact that the number of cars on line daily increased from 24,353 to 24,528, because of the fact that the narrow-gage equipment from the Interoceanic Railway is included in these figures. The increase from 865 to 874 gross ton-kilometers per train-kilometer, and the increase in freight train speed from 19.5 to 19.7 kilometers per hour, produced an increase from 16,893 to 17,236 gross ton-kilometers per train-hour, which shows greater efficiency in train operation.

# A REVIEW OF RAILWAY OPERATIONS IN 1948

By J. H. PARMELEE
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Marked progress in the railroad capital improvement program took place in 1948. More than 100,000 new freight cars, 1,450 new locomotives, and 1,100 new passenger-train cars were installed during the year, an accomplishment about equal to that of the two preceding years combined. While the primary emphasis has been on equipment replacements in the postwar period to date, much was also achieved in 1948 in betterment of roadway and structures, such as laying heavier rail and new crossties, ballast renewal, grading, and installation of signaling devices.

This progress was accomplished at a price—a high price. In 1948, for the second time in history, gross capital expenditures of the railroads crossed the billion-dollar mark, surpassing the previous all-time record expenditure of $1,059 million in 1923 by nearly $200 million. However, because of the reduced purchasing power of the dollar the $1,250 million expended in 1948 bought less in terms of physical quantities than the $1,059 million expended in 1923.

### Still Much to Be Done

Despite the considerable advance made in 1948, much still remains to be done. At the close of the year, as many units of new equipment were on order as were installed during the year. Thus, at least another full year of capital improvement work seems assured, barring unforeseen developments in the national economy. Beyond that prospect, of course, lies the unpredictable future, but those close to the situation believe that another year is not sufficient time in which to close the books on the railroads' postwar improvement programs.

Railroad traffic continued in heavy volume in 1948, although at lower levels than in 1947. Ton-miles, aggregating 640 billion, were 2.3 per cent below the record peacetime aggregate attained in 1947. Passenger-miles, which approximated 41 billion, showed a greater decrease of 11 per cent. Compared to the last prewar year, 1940, railroad freight traffic in 1948 was greater by 71 per cent, and passenger traffic was greater by 72 per cent.

Railroads enter the year 1949, as they did each of the first three postwar years, facing considerable uncertainty as to earnings. This situation resulted from third-round wage increases and continuing and sustained increases in unit prices of fuel, materials and supplies. Applications for further increases in freight rates and mail pay, designed to offset these recent increases in operating costs, were pending before the Interstate Commerce Commission at the close of the year. If the increases sought are authorized, if traffic volume in 1949 is sustained close to 1948 levels, as foreseen by the railroads in their petitions to the commission, and if no further substantial cost increases are incurred, the railroads will be enabled to carry forward without interruption the long-range capital improvement program now under way. A disturbing element in connection with prospective costs is the recommendation of an Emergency Board that the 40-hour week for non-operating employees be instituted on September 1, 1949.

On the whole, the year 1948 was one of progress. Traffic was at high level; efficiency records were excellent; equipment deliveries increased; car shortages declined. The rate of return increased moderately, from 3.41 per cent in 1947 to 4.24 per cent in 1948, although still below the desired 6 per cent. Will 1949 bring further progress along these constructive lines? A definite "yes" or "no" answer cannot be given at this time, but the railroads enter 1949 with that goal in view.

Having surveyed the principal features of railroad operation in 1948, we may now devote attention to detailed facts and statistics. These relate to railroad employment, wage rates, and wage adjustments; railroad material prices; rate and fare developments; statistics of traffic, revenues and expenses, and general operating results. The statistics throughout are those of railroads of Class I, and for the most part are derived from reports of the Interstate Commerce Commission. Carloading statistics and certain other data are, however, tabulations of the Association of American Railroads The entries for 1948 are necessarily based in part on estimates.

### Employment and Wages

Railroad employment in 1948 average 1,327,000 persons. This was a reduction of about 25,000 under 1947, and 93,000 below the wartime peak in 1945. The railroad payroll for 1948 aggregated $4,743 million.

The straight-time rate of pay of railroad employees averaged 74.2 cents per hour in 1940, 117.5 cents per hour in 1947, and 130.5 cents per hour in 1948. The rate of pay at the end of 1948—reflecting the increased wage rates made effective in October—averaged about 138 cents per hour, nearly twice the average for 1940.

Annual earnings of railroad employees averged $1,913 per man in 1940, increased to $3,218 in 1947, and reached a new high of $3,575 in 1948. Including the effect of increased rates of pay granted in the latter part of 1948, annual earnings now average about $3,750 per employee.

Table 1 shows for 1948, and for each of the preceding eight years, the average number of employees.

total payroll, average compensation per employee per year, and average straight-time rate of pay per hour.

**Table 1 — Employees and Their Compensation**

| Year | Average Number | Total payroll (millions) | Compensation per employee per year | Average straight time rate per hour (cents) |
|---|---|---|---|---|
| 1948 .. | 1,327,000 | $4,743 | $3,575 | 130.5 |
| 1947 .. | 1,351,961 | 4,350 | 3,218 | 117.5 |
| 1946 .. | 1,359,263 | 4,171 | 3,068 | 111.7 |
| 1945 .. | 1,419,505 | 3,862 | 2,721 | 93.3 |
| 1944 .. | 1,414,776 | 3,858 | 2,727 | 93.0 |
| 1943 .. | 1,355,114 | 3,521 | 2,598 | 89.3 |
| 1942 .. | 1,270,687 | 2,932 | 2,307 | 83.5 |
| 1941 .. | 1,139,925 | 2,332 | 2,045 | 76.9 |
| 1940 .. | 1,026,848 | 1,964 | 1,913 | 74.2 |

The railroad payroll for 1948 was the greatest on record, exceeding that of 1947 by $393 million, or 9.0 per cent, and totaling nearly 2½ times the 1940 figure.

In the field of labor relations, the year 1948 was replete with negotiations, proceedings under the Railway Labor Act, administrative and court actions, temporary possession of the railroads by the government, and settlement of some of the disputes. A number of areas of disagreement remained unsettled as the year closed.

At the beginning of 1948, the so-called second-round wage and rules demands of the Brotherhood of Locomotive Engineers, Brotherhood of Locomotive Firemen and Enginemen, and the Switchmen's Union of North America were still under negotiation. The railroads had invoked the services of the National Mediation Board and mediation continued to January 15, 1948, on which date the board urged the parties to arbitrate. Arbitration was accepted by the railroads, but was refused by the brotherhoods.

The following day, January 16, the three brotherhoods issued a strike order, to become effective February 1. Faced with a threatened stoppage in rail transportation, the President appointed an Emergency Board, which commenced hearings in Chicago on February 2. The Emergency Board reported to the President on March 27, 1948, recommending that the basic daily rates of pay of employees represented by the three operating unions be increased by $1.24, the equivalent of 15½ cents per hour, retroactive to November 1, 1947. This recommendation followed the pattern set in 1947 by the non-operating arbitration award and the settlement agreed to by the other operating unions.

In addition, the Emergency Board recommended changes in certain working rules for yard employees, recommended that engineers' and firemen's wage rates in through freight service be established in yard service, recommended an additional increase of 17 cents a day for hostlers and hostler helpers, and dealt with a number of other matters relating to short turnaround passenger service, delays at terminals, the held-away-from-home terminal rule, and minimum guarantees.

These recommendations were accepted by the railroads. The three brotherhoods declined to accept them, and on April 29, 1948, formally advised their members to withdraw from service on May 11.

The National Mediation Board attempted again to mediate the dispute, but without success. On May 6, 1948, the chiefs of the three brotherhoods were called to Washington by Presidential Assistant John R. Steelman but rejected his request that they accept the Emergency Board's recommendation.

The President accordingly signed an Executive Order directing the secretary of the army to take possession of the railroads at noon on May 10. As the brotherhoods did not rescind their strike call, the government also obtained a temporary restraining order against the strike. This order later developed into a series of litigious steps, which are described later.

Further conferences were held between representatives of the three brotherhoods and the railroads, and also with government representatives. Finally on July 9, 1948, the parties accepted a proposal to form the basis of an agreement. With this "proposal for settlement" agreed to, possession of the railroads by the government was relinquished on July 9.

The agreements which concluded this long dispute were executed on August 11, 1948. They provided for the same basic wage increase recommended by the Emergency Board, and many of the rules changes recommended by the board.

In addition, the same parties on August 11 signed a "Memorandum of Understanding," which provided that the difference between the wage increase of 15½ cents per hour agreed to on that date, and the amount originally requested by the same three brotherhoods on September 30, 1947, would be accorded the same procedural status as if served as a new wage request on June 30, 1948. This action was taken because, on June 30, the Order of Railway Conductors and Brotherhood of Railroad Trainmen had served notice for a wage increase of 25 per cent, with a minimum increase of $2.50 per basic day.

Railroad representatives met representatives of the conductors' and trainmen's organizations, and representatives of the engineers', firemen's and switchmen's organizations, separately, on September 14, in regards to their so-called third-round wage demands.

On October 4, 1948, an agreement was signed with representatives of the Order of Railway Conductors and the Brotherhood of Railroad Trainmen. It provided a wage increase of 80 cents per basic day, equivalent to 10 cents per hour, the increase to become effective on October 16. The same wage increase was offered the engineers, firemen, and switchmen, and on November 12, 1948, those three organizations accepted it, also effective as of October 16.

In the meantime, sixteen non-operating railroad unions on April 10, 1948, served notices of their demand for:

1. 48 hours pay for a 40-hour week, Monday through Friday.
2. Time and one-half pay for Saturday, and double time for Sundays and holidays.
3. In addition, a wage increase of 25 cents per hour.

These demands of the non-operating unions ran through the usual procedure of conferences and mediation, and finally, on October 22, 1948, appointment by the President of an Emergency Board. Hearings were held by the board in Chicago from October 26, 1948, to November 27.

On December 17 the board made the following recommendations to the President:

1. That effective September 1, 1949, the railroads establish for non-operating employees—except dining car employees, certain marine employees, and yardmasters—a work-week of 40 hours consisting of 5 days of 8 hours each, with two consecutive days off in each seven. The work-week may be staggered to accord with operational requirements, but so far as practical the days off shall be Saturdays and Sundays.

2. That effective with the establishment of the 40-hour work-week, all rates of pay in effect prior to October 1, 1948, be increased by 20 per cent, so that employees will make the same basic earnings in 40 hours of work as now earned for 48 hours of work. Overtime at the rate of time and one-half to be paid for work performed on the sixth and seventh days.

3. That the parties agree, before September 1, 1949, on changes in certain existing rules not consistent with the 40-hour work-week.

4. That effective October 1, 1948, the basic rate of pay of non-operating employees be increased by 7 cents per hour.

5. That, with respect to dining car employees, their guaranteed work-month be reduced to 205 hours and that employees in longer marine operations, paid on a monthly basis, receive a proportionate reduction in hours to become effective September 1, 1949.

6. That yardmasters be granted a general wage increase of 10 cents per hour, effective from October 16, 1948, the same effective date and the same increase accepted by other yardmasters represented by operating organizations. The board recommended no change in the work-week for yardmasters.

These recommendations were under consideration by the parties at the end of 1948.

According to the Emergency Board's report of December 17, its recommendations for changes in pay and working conditions of non-operating employees would cost approximately $340 million in 1949, including the cost of the short work-week proposed for the last four months of the year. On an annual basis, these recommendations would cost $640 million.

The annual increase in payroll and payroll taxes resulting from the 10 cent per hour increase granted as of October 16 to railroad operating employees will approximate $96 million.

The unions continue to press their demands. As the year 1949 opened, the railroads had before them a notice dated November 18, 1948, served by the Order of Railway Conductors and the Brotherhood of Railroad Trainmen, and a notice dated November 30, 1948, served by the Brotherhood of Locomotive Engineers, Brotherhood of Locomotive Firemen and Enginemen, and Switchmen's Union of North America, for changes in the vacation agreement. The proposals contemplate that the current vacation agreement be modified in a number of important respects, proposing an increase in the present annual vacation of seven days to from 15 to 30 days, dependent upon an employee's years of service.

## Increased Material Prices

The railroads also have before them a proposal from the Brotherhood of Locomotive Firemen and Enginemen for assignment of an additional fireman (helper) on multiple-unit road Diesel-electric locomotives, as well as a request made on most railroads by the Brotherhood of Locomotive Engineers for employment of an additional engineer on Diesel-electric locomotives in all instances where attention to engineroom machinery is required. Among other things, these proposals involve a jurisdictional dispute between the engineers and the firemen.

Fuel, material and supply prices continued to rise sharply during 1948, and railroads paid out record sums for purchases. Table 2 shows price indexes for selected dates since December, 1939, up to October 1, 1948.

**Table 2 — Railway Material Price Indexes (May, 1933 = 100)**

| | Material & supplies (other than fuel) | Fuel (coal & oil) | All material |
|---|---|---|---|
| December, 1939 | 130.7 | 134.3 | 131.9 |
| December, 1941 | 146.4 | 148.4 | 147.0 |
| December, 1943 | 159.5 | 180.5 | 166.2 |
| December, 1945 | 170.0 | 195.9 | 178.2 |
| December, 1946 | 199.2 | 228.5 | 208.5 |
| December, 1947 | 228.4 | 295.4 | 249.8 |
| June, 1948 | 242.2 | 321.4 | 267.4 |
| October 1, 1948 | 264.1 | 335.3 | 287.5 |

Charge-out price levels in the railroad industry are calculated for a given year by averaging the price indexes as of the previous December and the current June. This allows for the time lag between the dates supplies are purchased and the dates they are used and charged to operating expenses. On this basis of calculation, the charge-out price level in 1948 was 258.6; this is the average of the index of 249.8 for December, 1947, and 267.4 for June, 1948. The charge-out index for 1947 was 217.1 and for 1939 it was only 129.0. Thus the 1948 charge-out price index was 19.1 per cent higher than in 1947, and 100 per cent higher than in 1939.

If prices should remain relatively stable in 1949, the charge-out price index for the year would approximate the index shown in Table 2 for October 1, 1948, which was 287.5. That index is higher than the charge-out index for 1948 by 28.9 points, or 11.2 per cent. This would appear to be a conservative measure of the increased price levels confronting the railroads for 1949 operations—an increase of 11.2 per cent, compared with 1948.

At the time the record was closed in the 1947 freight rate case (Ex Parte 166), the latest price information available was as of November 1, 1947. The several interim decisions and the final decision handed down by the commission in that case were based on price indexes for that date. In the eleven months from November 1, 1947, to October 1, 1948, the price index increased 15.9 per cent. The increase in operating costs resulting from that rise in unit prices was an important factor in the decision of the railroads to seek an additional freight rate increase, as reflected in their petition to the Interstate Commerce Commission under date of October 12, 1948. A description of rate developments in 1948 follows in the next succeeding section of this review.

Again in 1948, as in each of the two preceding years, the railroads found it necessary to seek authority to increase their freight rates, passenger fares and mail pay rates, in order to meet, at least in part, the continuing increases in operating expenses brought about by higher wage rates and by further price advances.

*Freight Rates.* During the first eight months of 1948, three general increases in freight rates became effective, authorized by the Interstate Commerce Commission in the course of proceedings in Ex Parte No. 166. The first interim report in that case had been dated Octo-

ber 6, 1947, and authorized interim increases averaging 8.9 per cent, which became effective October 13, 1947. The next interim report, dated December 29, 1947, authorized a further interim increase, which (including the first increase) averaged 17.5 per cent, and became effective in January, 1948. Another report, dated April 13, 1948, authorized a third interim increase, which brought the total up to 21.4 per cent, and went into effect on May 6, 1948. The final report in the case, dated July 27, 1948, made some increases and some decreases in the interim authorizations, the net increase being about one per cent. These changes became effective on August 21, 1948.

Using the rate level in 1947, prior to Ex Parte No. 166, as the base, the three increases effectuated in 1948 totaled 13.7 per cent, bringing the cumulative increases authorized in that case (in both 1947 and 1948) up to 22.6 per cent.

According to the commission's Bureau of Transport Economics and Statistics, postwar increases in freight rates to the end of 1948 were as follows: (These percentages are calculated, cumulatively, on the basis of the freight rate level existing in 1946 prior to Ex Parte No. 162.)

| Effective Date | Cumulative increases over rates in effect on June 30, 1946 |
|---|---|
| July 1, 1946 (Ex Parte 162, interim) | 6.5% |
| Jan. 1, 1947 (Ex Parte 162, final) | 17.6 |
| Oct. 13, 1947 (Ex Parte 166, 1st interim) | 28.1 |
| Jan. 5, 1948 (Ex Parte 166, 2nd interim) | 37.8 |
| May 6, 1948 (Ex Parte 166, 3rd interim) | 42.8 |
| Aug. 21, 1948 (Ex Parte 166, final) | 44.2 |

The entries in this table tend somewhat to overstate the increases actually put into effect. One reason for this is the fact that some states have not yet allowed in part or in full corresponding increases in rates on intrastate traffic. A second reason is the fact that following horizontal freight rate increases of the kind sought and authorized in Ex Parte Nos. 162 and 166 it is necessary to make adjustments in certain rates in order to preserve existing relationships, to maintain competitive positions, or for other similar purposes. Taking these factors into account, the actual increase in the freight rate level since June 30, 1946, probably has not been greatly in excess of 40 per cent.

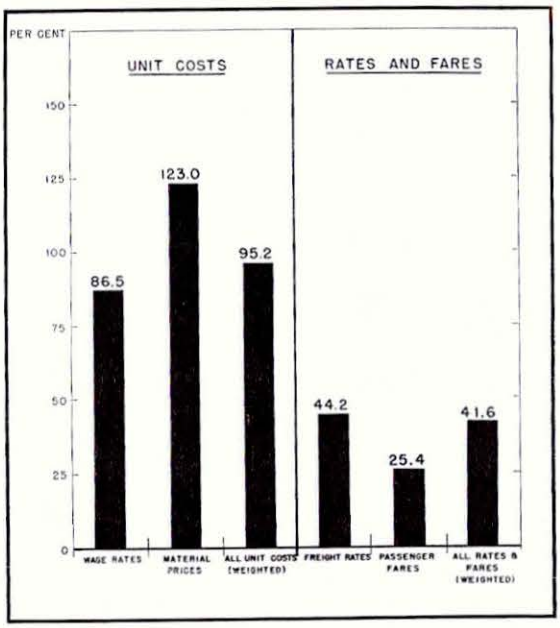
Unit costs of labor, material and other items comprising operating expenses and payroll taxes are approximately 97 per cent greater at the beginning of 1949 than in 1939. At the level of traffic anticipated for 1949, these cost increases mean the addition of about $4 billion to operating expenses and payroll taxes for the year, over and above the corresponding amounts at 1939 unit costs. In contrast, the average level of freight rates, passenger fares, mail pay, and express rates has been raised only 42 per cent, producing an additional $2.8 billion of annual revenue, on the basis of estimated 1949 traffic volume. The gap of $1.2 billion between increased operating costs and increased operating revenues represents, in large measure, the basis for the railroad petitions for further increases in freight rates, now to be described.

The commission's final decision in Ex Parte No. 166, handed down on July 27, 1948, was based on wage rates and material prices in effect at about the time of the close of the hearings in December, 1947. Further

CHART A

**PER CENT INCREASE IN RAILROAD UNIT COSTS AND IN RATES AND FARES**

DECEMBER 1948 OVER YEAR 1939




and substantial increases in prices of railroad fuel, materials and supplies occurred thereafter, particularly in steel and coal prices following the signing of the labor contract in the bituminous coal industry in July, 1948. Consequently, on August 26, 1948, the railroads filed a petition with the Interstate Commerce Commission seeking specific increases in rates on coal, coke, and iron ore.

On October 1, 1948, the railroads filed a motion to withdraw the petition of August 26, 1948, and filed a new petition seeking a general increase of 8 per cent on all commodities, with specified maximum increases on fresh fruits and vegetables, lumber and sugar. The increase sought on coal and coke was 30 cents per net ton, and on iron ore 25 cents per ton (except on line-haul rates to Upper Lake ports for transshipment by water).

Three days later, on October 4, the railroads signed an agreement with the Brotherhood of Railroad Trainmen and the Order of Railway Conductors increasing wage rates by 10 cents per hour, effective October 16, 1948. The railroads accordingly on October 12, 1948, amended their petition of October 1, raising the proposed general increase in freight rates to 13 per cent, with corresponding increases in the maxima proposed on fresh fruits and vegetables, lumber and sugar. The increase sought on coal and coke was 40 cents per net ton, and on iron ore other than movements to Upper Lake ports, 35 cents per ton. At the same time, the carriers asked that the lesser increases proposed in the petition of October 1 be authorized immediately as an interim measure, pending full and complete hearings on the petition of October 12.

The commission docketed the matter as Ex Parte No. 168 and set November 30, 1948, as the hearing

date. The carriers filed their testimony and exhibits with the commission and all parties at interest on November 9, three weeks in advance of the hearings.

Hearings and oral argument on the interim proposal were concluded December 10. In the course of the hearings, the carriers submitted their complete case, including both the interim and the longer range proposals. Opposing parties will complete their testimony on the 13 per cent request at further hearings, to be held early in 1949.

The commission on December 30 authorized an interim increase, effective on five days' notice, ranging from 4 to 6 per cent with certain maxima, and averaging about 5 per cent.

*Passenger fares.* At the beginning of the war, basic passenger fares for travel in parlor and sleeping cars were 3 cents per mile, for travel in coaches 2 cents per mile (except in the South, where the basic fare was 1½ cents per mile), and for commutation service a little more than one cent per mile. Increases authorized in Ex Parte No. 148, effective in February, 1942, raised basic fares by 10 per cent. Later in the same year coach fares in the South were raised to the same level as in other territories, 2.2 cents per mile. During the war, of course, the railroads made adjustments in passenger rates for troop movements, and made effective a special rate of 1¼ cents per mile, on a round-trip basis, for members of the armed forces traveling at their own expense while on furlough. Many billion passenger-miles were traveled at these special furlough rates.

Postwar passenger fare adjustments were initiated in 1947, when first the New York, New Haven & Hartford, then other eastern railroads, obtained authority to increase basic fares in sleeping and parlor cars to 3.5 cents per mile and in coaches to 2.5 cents per mile. This action was followed later that year by southern and western lines, although some of those increases did not become effective until March 1, 1948. Meanwhile, the New Haven advanced basic coach fares to 2.875 cents per mile, late in 1947. In addition, commutation fares were generally increased throughout the country by about 20 per cent.

In the summer of 1948, all eastern roads, including three of the four Pocahontas lines, were authorized to increase sleeping and parlor car basic fares to 4 cents per mile and basic coach fares to 3 cents per mile. These increases became effective on July 19, 1948.

The overall increase in passenger fares to the end of 1948, compared with those in effect in 1939, is estimated at 25.4 per cent.

*Mail pay.* The railroads filed a petition with the Interstate Commerce Commission on February 19, 1947, seeking an increase of 45 per cent in mail pay rates. Although the railroad case was heard by the commission in July, September and October, 1947, the Post Office Department has not yet submitted any evidence. On December 23, 1947, the commission authorized an interim increase in mail pay rates of 25 per cent, retroactive to February 19, 1947.

Operating costs have continued to rise since the original mail pay petition was filed, and the railroads on June 24, 1948, submitted an amended petition, advancing the permanent increase sought from 45 per cent to 65 per cent.

*Express rates.* To the end of 1947, the Railway Express Agency had increased its rates by 49.8 per cent over rates in effect in 1939. In order to offset wage increases incurred in the latter part of 1947, a further increase was made effective on January 22, 1948, raising the level 59.8 per cent above that of 1939. In response to the commission's request, the agency later in the year filed a proposal for a single nationwide scale of express rates. Hearings were held on the proposal in September, 1948, and the decision was handed down December 30. The new plan adopts the western rate scale, its result being to raise rates slightly in the East and the South over those previously in effect.

*Per Diem Rates.* The American Short Line Railroad Association filed a petition with the Interstate Commerce Commission on July 12, 1946, which challenged the established per diem rate as being unreasonably high. Subsequently, certain other carriers joined in this complaint (I.C.C. Docket 29587). Later, on May 22, 1947, six western railroads filed a joint petition (I.C.C. Docket 29751) contending that the existing per diem rate was unreasonably low. The two cases were consolidated for hearing, and hearings before a commission examiner were concluded in January, 1948. On August 16, 1948, the examiner's proposed report was released, recommending the dismissal of both proceedings. The matter was argued before the full commission on December 17, 1948.

*Reparation Cases.* Beginning in 1947, and continuing into 1948, the government filed some 17 complaints with the Interstate Commerce Commission, alleging overcharges during the war on a large number of specified commodities destined for military and naval use, naming nearly 1,000 different railroads as defendants, and claiming reparations. No exact estimate of the amount of reparations involved in the cases has been made, although some government sources have intimated that the aggregate might equal or exceed two billion dollars.

The commission set 5 of the 17 cases for joint hearing in September, 1948, but the date was later postponed to some indefinite future date. These claims, involving huge sums of money, represent an unpleasant prospect for the railroad industry. Regardless of the merits of the claims, which only the commission may determine, a long and complex series of hearings seems indicated.

**Table 3 — Comparative Traffic Summary**

| | | | |
|---|---|---|---|
| **Revenue Carloadings (thousands)** | | | |
| 1948 | 42,834 | 1943 | 42,440 |
| 1947 | 44,503 | 1942 | 42,771 |
| 1946 | 41,341 | 1941 | 42,352 |
| 1945 | 41,918 | 1940 | 36,358 |
| 1944 | 43,408 | 1929 | 52,828 |
| **Revenue Ton-miles (millions)** | | | |
| 1948 | 640,000 | 1943 | 727,075 |
| 1947 | 654,728 | 1942 | 637,984 |
| 1946 | 591,982 | 1941 | 475,072 |
| 1945 | 681,001 | 1940 | 373,253 |
| 1944 | 737,246 | 1929 | 447,322 |
| **Revenue Passenger-miles (millions)** | | | |
| 1948 | 41,000 | 1943 | 87,820 |
| 1947 | 45,921 | 1942 | 53,659 |
| 1946 | 64,673 | 1941 | 29,350 |
| 1945 | 91,717 | 1940 | 23,762 |
| 1944 | 95,549 | 1920 | 46,849 |

Table 3 shows comparative statistics of freight and passenger traffic from 1940 to 1948, and for certain earlier years. The entries for 1948 are partly estimated. Carloadings, ton-miles, and passenger-miles were at comparatively high levels in 1948, although below the totals attained in 1947. Passenger traffic in particular declined, being about 11 per cent lower than the 1947 total.

*Revenue Carloadings.* Loadings of revenue freight in 1948 totaled 42,834,000 cars, a decrease of more than one and one-half million cars under 1947, or 3.7 per cent. Despite this decrease, loadings were greater than in any year since 1930, excepting only the years 1944 and 1947.

Loadings for each of the eight general commodity groups in 1948 are shown in Table 4, together with the increase or decrease compared with 1947.

**Table 4 — Carloadings by Commodity Groups**

| | 1948 | Decrease under 1947 | |
|---|---|---|---|
| | | Number | |
| | (000) | (000) | Per cent |
| Ore | 2,781 | I 129 | I 4.9 |
| Coke | 736 | I 4 | I 0.5 |
| Miscellaneous | 19,672 | 377 | 1.9 |
| Forest Products | 2,359 | 55 | 2.3 |
| Coal | 8,730 | 358 | 3.9 |
| Grain | 2,467 | 258 | 9.5 |
| Merchandise, l.c.l. | 5,458 | 614 | 10.1 |
| Livestock | 631 | 39 | 18.1 |
| Total | 42,834 | 1,668 | 3.7 |

I = Increase

Six of the eight commodity groups decreased in 1948, ranging from 1.9 per cent in the case of miscellaneous products to 18.1 per cent for livestock. The greatest decrease in 1948, in terms of number of cars loaded, was registered in the l.c.l. group, a decrease of 614,000 cars being recorded for the year. Both the ore and the coke loadings increased.

*Revenue Ton-miles.* With continued high levels of industrial employment and production, revenue ton-miles were at a correspondingly high level throughout the year. The estimated aggregate of 640 billion ton-miles in 1948 was only 2.3 per cent less than the record peacetime total in 1947 and 13.2 percent below the all-time record established in 1944, a war year. It was more than 70 per cent greater than the 1940 total, and 43 per cent greater than in 1929, the peak year prior to the second world war.

The trend in ton-miles since the end of the war is shown in Table 5, by quarterly periods beginning with 1946. Ton-miles in the first two quarters of 1948 were below the corresponding periods in 1947. They exceeded 1947 by a small margin in the third quarter, but fell behind again in the final quarter.

**Table 5 — Revenue Ton-miles by Quarters (billions)**

| | 1946 | 1947 | 1948 |
|---|---|---|---|
| First quarter | 145.7 | 157.9 | 150.9 |
| Second quarter | 126.6 | 160.2 | 158.1 |
| Third quarter | 160.7 | 165.2 | 167.7 |
| Fourth quarter | 158.9 | 171.4 | 163.3 |

*Passenger-miles.* The decline in passenger traffic which started early in 1946 continued throughout 1948. Passenger-miles for the year 1948 are estimated at 41 billions, 11 per cent below 1947 and 57 per cent below the wartime peak of 95.5 billions in 1944. Notwithstanding this continuing decline in passenger-miles, the 1948 aggregate was greater than in any year from 1921 to 1941, inclusive.

The second regular session of the 80th Congress convened on January 3, 1948, and adjourned on June 21. A special session, called by the President, convened July 26, and adjourned August 7. Legislation enacted directly affecting or of interest to the railroads is summarized below.

## Legislation Enacted

*Reed-Bulwinkle Act* (Public Law No. 662). Provides for stay of operation of the anti-trust laws with respect to carrier agreements and other joint actions relating to rates and charges, subject to finding by the Interstate Commerce Commission that such actions are in furtherance of the national transportation policy. A Presidential veto of the measure on June 12 was overridden the following week by substantial margins in both House and Senate. The law constitutes section 5a of the Interstate Commerce Act.

*Mahaffie Act* (Public Law No. 478). Permits voluntary modification of the terms and provisions of railroad securities, subject to consent of holders of 75 per cent of the affected securities and approval of the Interstate Commerce Commission. Designed to minimize the necessity for resort to the more complicated, protracted, and expensive procedures involved in reorganization under section 77 of the Bankruptcy Act. The act, approved April 9, 1948, is now section 20b of the Interstate Commerce Act.

*Wolverton Act* (Public Law No. 744). Amends the Railroad Retirement and Unemployment Insurance Acts. The act, approved June 23, increases railroad retirement annuities and pensions by 20 per cent, and restores the lump-sum death-benefit payments, provided for originally in the Railroad Retirement Act of 1937 but eliminated by the Crosser amendments in 1946. Benefits under the Railroad Unemployment Insurance Act are not changed, but the new act substitutes for the flat 3 per cent payroll tax on the railroads a graduated scale of taxes ranging from one-half of 1 per cent when the Railroad Unemployment Insurance Account (or reserve) amounts to $450 million or more, to 3 per cent when the reserve drops below $250 million. Currently, the reserve totals about $950 million. The minimum rate of one-half of 1 per cent became effective as of January 1, 1948.

*Air Parcel Post* (Public Law No. 819). Provides for air parcel-post service and establishes eight rate zones for mailable matter exceeding 8 ounces in weight, but not weighing more than 70 pounds nor measuring more than 100 inches in length and girth combined. Approved June 29.

*Federal Aid for Highways* (Public Law No. 834). Authorizes appropriation of $900,000,000 to continue the postwar highway construction program for two additional fiscal years (1950 and 1951) at an annual rate of $450,000,000. Approved June 29.

*St. Lawrence Waterway* (S. J. Res. 111). This resolution, which would authorize an agreement between the United States and Canada to construct the St. Lawrence Waterway project, was considered by the Senate committee on foreign relations during the first session of the 80th Congress (1947). When the

resolution reached the Senate on February 27, 1948, it was recommitted by a vote of 57 to 30. Near the close of the second session, a subcommittee of the Senate committee was appointed to make a further study of the project and report at the opening of the 81st Congress. No consideration was given the resolution by the House during 1948.

*Federal Department of Transportation* (S.1812 and H.R.3595). These two bills, which would establish a federal Department of Transportation embracing the Interstate Commerce Commission, U. S. Maritime Commission, Civil Aeronautics Administrator and Civil Aeronautics Board, Office of Defense Transportation, and certain other agencies, were introduced late in 1947. Hearings on the Senate bill were begun in March, 1948, but were recessed and no report has been made. No hearings were held on the House measure.

*Venue in Personal Injury Suits* (H.R.1639 and S.1567). These are identical bills. H.R.1639 was passed by the House on July 17, 1947, and sent to the Senate, where it was referred to the Senate judiciary committee and further referred to a subcommittee. As passed by the House, the bill would limit the venue of all personal injury or wrongful death suits brought against a railroad to the county, if a state court action, or to the federal district, if a federal court action, where the accident occurred or the plaintiff resided. The Senate subcommittee favorably reported the measure (with certain amendments) on May 17, 1948. No further action was taken.

*Disposal of Federal Barge Lines* (H.R.4021, H.R. 5318, and H.R.5476). These bills would facilitate disposal by the federal government of the barge-line properties of the Inland Waterways Corporation. Hearings were held in February and March, 1948, by the House committee on interstate and foreign commerce. The committee reported H.R.5318, with amendments, on May 3, but it was not considered by the House.

## National Transportation Inquiry

The 80th Congress renewed the National Transportation Inquiry, which had its inception in a resolution of the House of Representatives, authorizing the House committee on interstate and foreign commerce to investigate the transportation situation with a view to recommending legislation. Hearings were held by the committee in April and June, 1948. The April hearings were concerned with three questions: (1) the advisability of federal regulation of all forms of transportation by one agency, (2) subsidies "under present conditions of national defense and competition among carriers," and (3) the sufficiency of the present statutory authority of regulatory bodies "to deal with the rapid movement of economic events." The June hearings dealt with the ability of transport agencies, and especially the railroads, to meet transportation needs in the event of an emergency.

A cease-and-desist order of the Federal Trade Commission, directed to the cement industry in 1943, was sustained by the Supreme Court in April, 1948. Among other things, the order and court decision when read together would seem to outlaw the quoting of commodity prices on a basing-point basis, with absorption by the manufacturer of transportation charges from factory to the basing-point. On this interpretation of the commission and court actions, manufacturers would be subject to prosecution unless they quote prices only on an f.o.b. (sometimes called a mill net) basis.

Because of the confusion into which many established trade practices were thrown by these actions, a subcommittee on trade policies of the Senate committee on interstate and foreign commerce held extensive hearings during the last half of 1948. Many witnesses appeared, representing government agencies, the business world, and the general public. Almost without exception, representatives of business recommended legislative changes that would permit basing-point or similar methods of pricing, provided such methods were free of collusion. The subcommittee has not yet made a report.

## Court Proceedings

The following developments took place in 1948 in the government's anti-trust suit against the Association of American Railroads, Western Association of Railway Executives, and certain individual defendants. At the close of 1947, briefs had been filed supporting the carriers' objections to many of the 809 exhibits introduced by the government, and in support of a motion to dismiss all of the individuals named as defendants in the case, together with the government's reply briefs with respect thereto. Oral argument on those issues was heard by the court on February 3, 1948, at Lincoln, Neb., at the conclusion of which Judge Delehant stated that he would take the matter under advisement. No announcement of his conclusions has yet been made.

Following enactment of the Reed-Bulwinkle Act (June 17, 1948), defendants filed a motion on July 30 asking that an order be entered by the court permitting them to file amended or supplemental pleadings and additional objections to the government's exhibits. Argument of this motion was heard on September 29, 1948, and the court, on October 16, entered an order allowing defendants until January 15, 1949, to file such supplemental pleadings and objections. Plaintiff is allowed until March 1, 1949, to reply. In a memorandum opinion which accompanied his order of October 16, Judge Delehant stated that the new law, and the steps which might be taken thereunder, "will sharply restrict the scope of this court's action and limit the reach of any decree in favor of the plaintiff which the court may conceivably be called upon by the evidence to enter."

In the Georgia Anti-trust case (State of Georgia v. Pennsylvania Railroad Company *et al*) which was argued before a special master on May 30, 1947, no report has yet been made by him to the Supreme Court.

Reference has already been made to the anti-strike injunction issued in May, 1948, designed to restrain the engineers, firemen, and switchmen from carrying out their threat to strike. The injunction, signed on May 10 by Justice T. Alan Goldsborough of the District Court of the United States for the District of Columbia, was first issued on a temporary basis. After a number of hearings, the court made the injunction permanent on July 2, 1948. The brotherhoods on July 6

filed an appeal with the United States Court of Appeals for the District of Columbia. While the case was still pending in that court, the brotherhoods on September 14 petitioned the Supreme Court for a writ of certiorari to review, before judgment in the appellate court, the action of the district court in granting the permanent injunction.

This was the posture of the injunction proceedings at the close of 1948.

### The Competitive Situation

Modes of transport competing with railroads made further gains in traffic volume in 1948. Prewar percentages of total traffic were closely approached by inland water carriers and pipelines, and were exceeded by motor trucks and buses. In each case, their proportion of total traffic was greater than for 1947. Scheduled air carriers have quadrupled their proportion of the aggregate commercial passenger traffic since 1939. They have also made large gains in express and freight traffic, although still handling a small percentage of the total.

Total intercity freight traffic in the United States is estimated at more than one thousand billion ton-miles for 1948, a record peacetime volume. This compares with 986 billion in 1947 and 534 billion in 1939. The railroad proportion of these totals was about 64 per cent in 1948, 67 per cent in 1947, and 63 per cent in 1939.

In the passenger-carrying field, the several agencies of transport, excluding private automobiles, handled about 72.5 billion passenger-miles in 1948. This figure is some 7 billion less than in 1947, but almost twice as great as the 1939 volume. The railroad proportion of commercial intercity passenger traffic in 1948 was about 55 per cent, compared with 58 per cent in 1947, and 61 per cent in 1939. Thus, the railroad proportion of total passenger traffic in 1948 fell below that of 1939.

Total passenger traffic volume has increased about 96 per cent since 1939. By types of transport, railroad passenger-miles have increased 76 per cent, inland waterways 35 per cent, buses 110 per cent, and air carriers nearly 800 per cent. Comparing 1948 passenger traffic with that of 1947, the total decreased about 8½ per cent, all principal types sharing in the decline.

### Railroad Retirement Board Operations

*Railroad Retirement.* The number of beneficiaries on the retirement rolls of the Railroad Retirement Board, as well as the benefit disbursements to such beneficiaries, rose to new high levels in 1948. The number increased not only because it included employees who retired under the age and disability provisions of the retirement system, but because of further additions of many thousands of recipients of the new survivor benefits which became effective January 1, 1947. The increase in benefit disbursements reflected also the increase of 20 per cent in all retirement annuities and in pensions to former carrier pensioners, which became effective under the Wolverton amendments on July 1, 1948.

Beneficiaries on the retirement rolls, as of October 31, 1948, numbered 332,471, compared with 267,556 on the corresponding date in 1947. This increase was less than that for the corresponding period 1946-1947, which reflected the initial impact of the added survivor benefits and liberalized disability qualifications which became effective under the Crosser Act on January 1, 1947.

The increase of 64,915 beneficiaries in 1948 resulted from a net increase of 49,586 in the number of survivor annuities payable to widows, children and parents, a net increase of 17,210 in the number of retirement annuities, and a decrease of 1,881 in the number of pensions payable to persons transferred from the voluntary rolls of the carriers in 1937, by reason of deaths among that group.

Comparison of this increase in beneficiaries with the increase occurring between corresponding periods of previous years is shown in the following tabulation:

| As of October 31, | 1948 over 1947 | 1947 over 1946 | 1946 over 1945 |
|---|---|---|---|
| Increase in annuitants | 17,210 | 24,902 | 16,226 |
| Decrease in pensioners | 1,881 | 2,160 | 2,382 |
| Increase in survivor annuities | 49,586 | 56,040 | ..... |
| Net increase | 64,915 | 78,782 | 13,844 |

Total retirement benefit disbursements during the month of October, 1948, aggregated $23,243,506, compared with $18,885,910 for October, 1947. Thus the annual level rose from $226,631,000 to $278,922,000, an increase of $52,291,000.

Despite a moderate decrease in railway employment and the fact that the payroll tax rate for railway retirement remained the same in 1948 as in 1947 (5.75 per cent), retirement tax accruals by the railroads for the ten months ended October 31, 1948, amounted to $203,400,000, compared with $191,700,000 during the corresponding period of 1947. This increase reflected the higher level of wages in 1948.

Railroad employees paid a similar tax of 5.75 per cent on their wage up to $300 per month, and contributed the same amounts as their employers for retirement purposes.

Payroll taxes for railroad retirement are paid to the Bureau of Internal Revenue, which deposits them in the general fund of the Treasury. Appropriations are made annually by Congress to the Railroad Retirement Board of the estimated amount of taxes to be collected each year. Differences are adjusted in the appropriation for the following year. Congress also appropriates amounts on account of creditable military service performed by railroad employees. Separate appropriations are made for the board's administrative expenses.

The financial operations of the railroad retirement system from its inauguration in 1937 to October 31, 1948, are summarized in the following tabulation, which does not include appropriations for, or expenses of, administration.

| | | |
|---|---|---|
| Receipts: | | |
| From appropriations | $3,194,122,498 | |
| Interest on investments | 125,828,550 | |
| Total | | $3,319,951,048 |
| Benefit payments | | 1,609,033,685 |
| Balance | | $1,710,917,363 |

Administrative expenses for the entire period of

operation to October 31, 1948, amounted to $37,973,427.

*Railroad Unemployment Compensation.* Payments of railroad unemployment compensation benefits decreased in 1948. Benefit disbursements for the first 10 months amounted to $24,271,441, compared with $34,355,342 for the corresponding period of 1947, a decrease of $10,083,901, or 29.4 per cent. From peak levels of disbursements which averaged $4,572,860 per month during the first five months of 1947, the average for the corresponding period of 1948 declined to $3,265,670. During the five months ended October 31, 1948, benefit disbursements averaged $1,589,618 per month.

*Sickness and Maternity.* Benefit disbursements for sickness, injury and maternity, which became effective under the Crosser Act on July 1, 1947, aggregated $25,201,330 during the first 10 months of 1948. This amount was slightly greater than that for unemployment benefits, which aggregated $24,271,441 during the same period.

Payments for sickness, injury and maternity benefits during 1948 ranged from $1,851,967 in July to $2,913,664 in February. The average was $2,500,000 per month.

Unemployment tax accruals by Class I railways amounted to $17,700,000 for the 10 months ended October 31, 1948, compared with $100,006,000 during the corresponding period of 1947. This decline reflected the reduction in the payroll tax rate from 3 per cent to 0.5 per cent which became effective as of January 1, 1948, under the sliding scale of payroll taxes provided by the Wolverton amendments. Under the new tax provisions the rate will remain at 0.5 per cent so long as the amount in the railroad unemployment reserve amounts to $450,000,000 or more. As of October 31, 1948, the amount to the credit of the reserve was $954,514,697, thus assuring a continuation of the 0.5 per cent rate through 1949.

**Table 6 — Receipts and Disbursements (Operations of Railroad Unemployment Compensation System) Through October 31, 1948**

| | | |
|---|---|---|
| Receipts: | | |
| Taxes (incl. transfers from states) | $1,095,032,755 | |
| Interest on unemployment reserve fund | 86,329,268 | |
| Total receipts | | $1,181,362,023 |
| Disbursements: | | |
| Benefit disbursements (net) | $186,478,635 | |
| Administrative expenses | 36,025,908 | |
| Total disbursements | | $222,504,543 |
| Balance: | | |
| To credit of unemployment reserve | $954,514,697 | |
| To credit of administrative fund | 4,342,783 | |
| Total balance, October 31, 1948 | | $958,857,480 |

Table 6 covers the financial results of operation of the railroad unemployment compensation system for the entire period of operation, from its inauguration on July 1, 1939, to October 31, 1948.

## Reconstruction Finance Corporation

On May 25, 1948, the President signed S.2287 (Public Law 548), extending the Reconstruction Finance Corporation for six years beyond June 30, 1948, with an additional two years, or until June 30, 1956, for liquidation of the agency.

As of October 31, 1948, the status of loans to railroads was as follows:

| Loans to Railroads | |
|---|---|
| Authorizations | $1,258,485,587 |
| Disbursements | 1,138,842,164 |
| Repayments | 996,645,331 |
| Amount outstanding | 142,196,833 |

Railroad loans outstanding a year earlier, or on October 31, 1947, totaled $146,445,019. Thus there was a decrease of $4,248,000 during the twelve months to October 31.

## Office of Defense Transportation

The Office of Defense Transportation, scheduled to expire February 29, 1948, was granted a deficiency appropriation to extend its operations to June 30, 1948. Under provisions of Public Law 395, approved December 30, 1947, authority for the allocation of transportation facilities and equipment, then being administered by O.D.T., was extended through February 28, 1949. At a later date, Congress appropriated $340,000 for continued operations through February 28, 1949, of which $60,000 was made available for terminal-leave payments.

Col. J. Monroe Johnson continued as director of the Office of Defense Transportation, concentrating largely on matters pertaining to car supply, car distribution, and car service. He conducted a number of vigorous campaigns to obtain sufficient allocations of steel for new freight cars, for needed replacements of steel rail, and other material for maintenance purposes.

The Railroad Credit Corporation, which had been in process of liquidation for several years, made its final distribution in 1948. This organization was incorporated in 1932 as a part of the so-called "marshalling and distributing" plan authorized by the commission in its decision of October 16, 1931, in Ex Parte No. 103, granting temporary increases in freight rates on certain commodities. The additional rates collected under that decision on traffic handled between January 1, 1932, and March 31, 1933, amounting to some $75 million, were turned over to the Railroad Credit Corporation as a revolving loan fund. The corporation made total loans of $73,691,000 to railroads during its existence, suffered only minor losses, paid all its operating expenses, and returned to the contributing railways slightly more than 100 per cent of the original fund.

The final distribution of funds to participating carriers, made as of April 30, 1948, was $149,224, or approximately one-fifth of one per cent of the amount originally collected under the plan.

## Radio

In a proceeding instituted by the Federal Communication Commission (Docket 8972) on May 5, 1948, the commission issued a Notice of Proposed Rule Making which would take away 19 of the 20 frequencies assigned exclusively to the railroads in the 152-162 mc. band, for train communications. The proposal would supplant the present General Mobile Radio Service with three new classes of mobile service; (1) Land Transportation Radio Services, to provide communication facilities for railroads, intercity buses and trucks, and urban transit service; (2) Domestic Public Mobile Radiotelephone Services, to furnish com-

filed an appeal with the United States Court of Appeals for the District of Columbia. While the case was still pending in that court, the brotherhoods on September 14 petitioned the Supreme Court for a writ of certiorari to review, before judgment in the appellate court, the action of the district court in granting the permanent injunction.

This was the posture of the injunction proceedings at the close of 1948.

### The Competitive Situation

Modes of transport competing with railroads made further gains in traffic volume in 1948. Prewar percentages of total traffic were closely approached by inland water carriers and pipelines, and were exceeded by motor trucks and buses. In each case, their proportion of total traffic was greater than for 1947. Scheduled air carriers have quadrupled their proportion of the aggregate commercial passenger traffic since 1939. They have also made large gains in express and freight traffic, although still handling a small percentage of the total.

Total intercity freight traffic in the United States is estimated at more than one thousand billion ton-miles for 1948, a record peacetime volume. This compares with 986 billion in 1947 and 534 billion in 1939. The railroad proportion of these totals was about 64 per cent in 1948, 67 per cent in 1947, and 63 per cent in 1939.

In the passenger-carrying field, the several agencies of transport, excluding private automobiles, handled about 72.5 billion passenger-miles in 1948. This figure is some 7 billion less than in 1947, but almost twice as great as the 1939 volume. The railroad proportion of commercial intercity passenger traffic in 1948 was about 55 per cent, compared with 58 per cent in 1947, and 61 per cent in 1939. Thus, the railroad proportion of total passenger traffic in 1948 fell below that of 1939.

Total passenger traffic volume has increased about 96 per cent since 1939. By types of transport, railroad passenger-miles have increased 76 per cent, inland waterways 35 per cent, buses 110 per cent, and air carriers nearly 800 per cent. Comparing 1948 passenger traffic with that of 1947, the total decreased about 8½ per cent, all principal types sharing in the decline.

### Railroad Retirement Board Operations

*Railroad Retirement.* The number of beneficiaries on the retirement rolls of the Railroad Retirement Board, as well as the benefit disbursements to such beneficiaries, rose to new high levels in 1948. The number increased not only because it included employees who retired under the age and disability provisions of the retirement system, but because of further additions of many thousands of recipients of the new survivor benefits which became effective January 1, 1947. The increase in benefit disbursements reflected also the increase of 20 per cent in all retirement annuities and in pensions to former carrier pensioners, which became effective under the Wolverton amendments on July 1, 1948.

Beneficiaries on the retirement rolls, as of October 31, 1948, numbered 332,471, compared with 267,556 on the corresponding date in 1947. This increase was less than that for the corresponding period 1946-1947, which reflected the initial impact of the added survivor benefits and liberalized disability qualifications which became effective under the Crosser Act on January 1, 1947.

The increase of 64,915 beneficiaries in 1948 resulted from a net increase of 49,586 in the number of survivor annuities payable to widows, children and parents, a net increase of 17,210 in the number of retirement annuities, and a decrease of 1,881 in the number of pensions payable to persons transferred from the voluntary rolls of the carriers in 1937, by reason of deaths among that group.

Comparison of this increase in beneficiaries with the increase occurring between corresponding periods of previous years is shown in the following tabulation:

| As of October 31, | 1948 over 1947 | 1947 over 1946 | 1946 over 1945 |
|---|---|---|---|
| Increase in annuitants | 17,210 | 24,902 | 16,226 |
| Decrease in pensioners | 1,881 | 2,160 | 2,382 |
| Increase in survivor annuities | 49,586 | 56,040 | ..... |
| Net increase | 64,915 | 78,782 | 13,844 |

Total retirement benefit disbursements during the month of October, 1948, aggregated $23,243,506, compared with $18,885,910 for October, 1947. Thus the annual level rose from $226,631,000 to $278,922,000, an increase of $52,291,000.

Despite a moderate decrease in railway employment and the fact that the payroll tax rate for railway retirement remained the same in 1948 as in 1947 (5.75 per cent), retirement tax accruals by the railroads for the ten months ended October 31, 1948, amounted to $203,400,000, compared with $191,700,000 during the corresponding period of 1947. This increase reflected the higher level of wages in 1948.

Railroad employees paid a similar tax of 5.75 per cent on their wage up to $300 per month, and contributed the same amounts as their employers for retirement purposes.

Payroll taxes for railroad retirement are paid to the Bureau of Internal Revenue, which deposits them in the general fund of the Treasury. Appropriations are made annually by Congress to the Railroad Retirement Board of the estimated amount of taxes to be collected each year. Differences are adjusted in the appropriation for the following year. Congress also appropriates amounts on account of creditable military service performed by railroad employees. Separate appropriations are made for the board's administrative expenses.

The financial operations of the railroad retirement system from its inauguration in 1937 to October 31, 1948, are summarized in the following tabulation, which does not include appropriations for, or expenses of, administration.

| | | |
|---|---|---|
| Receipts: | | |
| From appropriations | $3,194,122,498 | |
| Interest on investments | 125,828,550 | |
| Total | | $3,319,951,048 |
| Benefit payments | | 1,609,033,685 |
| Balance | | $1,710,917,363 |

Administrative expenses for the entire period of

operation to October 31, 1948, amounted to $37,973,427.

*Railroad Unemployment Compensation.* Payments of railroad unemployment compensation benefits decreased in 1948. Benefit disbursements for the first 10 months amounted to $24,271,441, compared with $34,355,342 for the corresponding period of 1947, a decrease of $10,083,901, or 29.4 per cent. From peak levels of disbursements which averaged $4,572,860 per month during the first five months of 1947, the average for the corresponding period of 1948 declined to $3,265,670. During the five months ended October 31, 1948, benefit disbursements averaged $1,589,618 per month.

*Sickness and Maternity.* Benefit disbursements for sickness, injury and maternity, which became effective under the Crosser Act on July 1, 1947, aggregated $25,201,330 during the first 10 months of 1948. This amount was slightly greater than that for unemployment benefits, which aggregated $24,271,441 during the same period.

Payments for sickness, injury and maternity benefits during 1948 ranged from $1,851,967 in July to $2,913,664 in February. The average was $2,500,000 per month.

Unemployment tax accruals by Class I railways amounted to $17,700,000 for the 10 months ended October 31, 1948, compared with $100,006,000 during the corresponding period of 1947. This decline reflected the reduction in the payroll tax rate from 3 per cent to 0.5 per cent which became effective as of January 1, 1948, under the sliding scale of payroll taxes provided by the Wolverton amendments. Under the new tax provisions the rate will remain at 0.5 per cent so long as the amount in the railroad unemployment reserve amounts to $450,000,000 or more. As of October 31, 1948, the amount to the credit of the reserve was $954,514,697, thus assuring a continuation of the 0.5 per cent rate through 1949.

**Table 6 — Receipts and Disbursements (Operations of Railroad Unemployment Compensation System) Through October 31, 1948**

| | | |
|---|---|---|
| Receipts: | | |
| Taxes (incl. transfers from states) | $1,095,032,755 | |
| Interest on unemployment reserve fund | 86,329,268 | |
| Total receipts | | $1,181,362,023 |
| Disbursements: | | |
| Benefit disbursements (net) | $186,478,635 | |
| Administrative expenses | 36,025,908 | |
| Total disbursements | | $222,504,543 |
| Balance: | | |
| To credit of unemployment reserve | $954,514,697 | |
| To credit of administrative fund | 4,342,783 | |
| Total balance, October 31, 1948 | | $958,857,480 |

Table 6 covers the financial results of operation of the railroad unemployment compensation system for the entire period of operation, from its inauguration on July 1, 1939, to October 31, 1948.

## Reconstruction Finance Corporation

On May 25, 1948, the President signed S.2287 (Public Law 548), extending the Reconstruction Finance Corporation for six years beyond June 30, 1948, with an additional two years, or until June 30, 1956, for liquidation of the agency.

As of October 31, 1948, the status of loans to railroads was as follows:

**Loans to Railroads**

| | |
|---|---|
| Authorizations | $1,258,485,587 |
| Disbursements | 1,138,842,164 |
| Repayments | 996,645,331 |
| Amount outstanding | 142,196,833 |

Railroad loans outstanding a year earlier, or on October 31, 1947, totaled $146,445,019. Thus there was a decrease of $4,248,000 during the twelve months to October 31.

## Office of Defense Transportation

The Office of Defense Transportation, scheduled to expire February 29, 1948, was granted a deficiency appropriation to extend its operations to June 30, 1948. Under provisions of Public Law 395, approved December 30, 1947, authority for the allocation of transportation facilities and equipment, then being administered by O.D.T., was extended through February 28, 1949. At a later date, Congress appropriated $340,000 for continued operations through February 28, 1949, of which $60,000 was made available for terminal-leave payments.

Col. J. Monroe Johnson continued as director of the Office of Defense Transportation, concentrating largely on matters pertaining to car supply, car distribution, and car service. He conducted a number of vigorous campaigns to obtain sufficient allocations of steel for new freight cars, for needed replacements of steel rail, and other material for maintenance purposes.

The Railroad Credit Corporation, which had been in process of liquidation for several years, made its final distribution in 1948. This organization was incorporated in 1932 as a part of the so-called "marshalling and distributing" plan authorized by the commission in its decision of October 16, 1931, in Ex Parte No. 103, granting temporary increases in freight rates on certain commodities. The additional rates collected under that decision on traffic handled between January 1, 1932, and March 31, 1933, amounting to some $75 million, were turned over to the Railroad Credit Corporation as a revolving loan fund. The corporation made total loans of $73,691,000 to railroads during its existence, suffered only minor losses, paid all its operating expenses, and returned to the contributing railways slightly more than 100 per cent of the original fund.

The final distribution of funds to participating carriers, made as of April 30, 1948, was $149,224, or approximately one-fifth of one per cent of the amount originally collected under the plan.

## Radio

In a proceeding instituted by the Federal Communication Commission (Docket 8972) on May 5, 1948, the commission issued a Notice of Proposed Rule Making which would take away 19 of the 20 frequencies assigned exclusively to the railroads in the 152-162 mc. band, for train communications. The proposal would supplant the present General Mobile Radio Service with three new classes of mobile service; (1) Land Transportation Radio Services, to provide communication facilities for railroads, intercity buses and trucks, and urban transit service; (2) Domestic Public Mobile Radiotelephone Services, to furnish com-

mon carrier mobile radiotelephone service to the general public; and (3) Industrial Radio Services, for miscellaneous use, such as delivery and pick-up, automobile clubs, doctor's cars or ambulances. The commission proposes to assign the 19 frequencies it takes from the railroads to a new group, Public Safety Radio Services. The proposal does not indicate how frequencies would be redistributed among the several land transportation agencies, including the railroads.

The commission heard oral arguments on its proposal, beginning October 6, 1948, at which time the railroads appeared in opposition. It was pointed out that since December 31, 1945, when the commission promulgated regulations to govern railroad radio service, 1,830 railroad radio authorizations have been made, and radio installations are continuing. Responses to a questionaire sent out by the Association of American Railroads indicate that approximately $15,000,000 will be spent by railroads on radio equipment during the next three years.

The commission has not as yet announced its conclusions. The question may not be acted on finally without formal public hearing.

The growing importance attached by the railroads to mechanical and engineering research, as a means of perfecting rail transportation service, was emphasized during the year by the consummation of plans for erection of a large research laboratory in Chicago. The Illinois Institute of Technology will construct the building in its "Technology Center," at 32nd and Federal streets, with funds provided by the A.A.R. The estimated cost is $625,000. The 51-by-218-ft. building will house the research staffs of the Engineering and Mechanical Divisions of the A.A.R., and a new container testing laboratory for the Operating-Transportation Division. Tracks will be provided for impact tests of cars and lading and storage.

## *Financial Results of Operation*

Despite a record amount of gross, or total operating revenues, in 1948, due in large measure to freight rate and passenger fare increases made effective during the year, net earnings were moderate.

The four tables that follow show significant income account items for the years 1948 and 1947, and the average year of the war period, 1941-45. The entries for 1948 are estimates, based upon the returns of 34 representative railroad companies as a part of the submission of railroad exhibits to the commission in Ex Parte No. 168. Inasmuch as those returns were made in October, it has been necessary to make some revisions in the estimates, because of subsequent wage and other developments.

**Table 7 — Condensed Income Account**

| | 1948 (millions) | 1947 (millions) | 1941-5 Average (millions) |
|---|---|---|---|
| Total oper. revenues | $9,626 | $8,685 | $8,041 |
| Total oper. expenses | 7,498 | 6,797 | 5,451 |
| Opertg. ratio (per cent) | 77.9 | 78.3 | 67.8 |
| Taxes | 987 | 936 | 1,253 |
| Net ry. optg. income | 970 | 781 | 1,160 |
| Rate earned (per cent) | 4.24 | 3.41 | 4.97 |
| Net income, after chgs. | 653 | 479 | 679 |

Table 7 is a condensed income account of railways of Class 1, for the years and periods indicated.

The year 1948 exceeded the record for total operating revenues established in 1944 ($9,437 million) by nearly $200 million. This new record was established despite a smaller volume of freight and passenger traffic, and was the result of increased rate and fare levels. Compared with the annual average of the war period (1941-45), gross in 1948 was greater by $1,585 million, operating expenses were up $2,047 million and net railway operating income was down by $190 million. The rate of return on net investment decreased from a war period average of 4.97 per cent to 4.24 per cent in 1948.

Comparing the financial results for 1948 with those of 1947, gross increased $941 million, or 10.8 per cent. Operating expenses and taxes increased $752 million, or 9.7 per cent. The operating ratio in 1948 was 77.9 per cent, lower than in the next previous three years, but higher than in any other back to 1922.

Tax accruals for the year 1948 were $987 million, 5.4 per cent greater than in 1947. Payroll taxes showed a decrease of $85 million, due to the reduction in the unemployment insurance tax rate, but federal income taxes increased $102 million.

Net railway operating income for 1948 was $970 million, producing a return on net property investment of 4.24 per cent, compared with 3.41 per cent in 1947.

Net income after charges for the year 1948 was $653 million. This may be compared with a net income of $902 million in 1942, when gross revenues were 22 per cent less, and with $479 million earned in 1947.

Table 8 shows the five principal operating revenue accounts for the years 1948 and 1947, and the war period average.

**Table 8 — Operating Revenues**

| | 1948 (millions) | 1947 (millions) | 1941-5 Average (millions) |
|---|---|---|---|
| Freight ..... | $7,952 | $7,041 | $6,141 |
| Passenger ..... | 954 | 963 | 1,340 |
| Mail ..... | 191 | 170 | 121 |
| Express ..... | 121 | 116 | 114 |
| All other ..... | 408 | 395 | 325 |
| Total ..... | $9,626 | $8,685 | $8,041 |

Compared with war period averages, freight revenue in 1948 was greater by $1,811 million, and all other revenues, except passenger revenue showed increases. The passenger revenue, however, decreased by $386 million.

Comparing 1948 returns with those of 1947, freight revenue increased $911 million, or 12.9 per cent. This increase was due to increased rates granted during 1947 and 1948, which more than offset the smaller volume of traffic handled.

Passenger revenue decreased by $9 million, higher fares almost offsetting the 10.7 per cent drop in traffic volume handled. Mail revenue increased $21 million and express revenue $5 million. The entries for express revenue represent only what railroads receive from the Railway Express Agency in the form of distribution of the agency net earnings. Gross revenues of the agency itself in 1948 approximated $400 million.

Table 9 summarizes the operating expenses, by general accounts.

Total operating expenses amounted to $7,498 million in 1948. This was an increase of $701 million, or 10.3 per cent, over 1947, and was the greatest

**Table 9 — Operating Expenses**

| | 1948 (millions) | 1947 (millions) | 1941-5 Average (millions) |
|---|---|---|---|
| Maint. of way and struc. | $1,365 | $1,212 | $1,036 |
| Maint. of equipment | 1,702 | 1,558 | 1,476 |
| Traffic | 195 | 176 | 128 |
| Transportation | 3,831 | 3,476 | 2,538 |
| General and other | 405 | 375 | 273 |
| Total | $7,498 | $6,797 | $5,451 |

amount charged to expenses in any year. The increase over the war period average was $2,047 million, or 37.6 per cent.

Maintenance of way and structures expenses increased 12.6 per cent in 1948, over 1947, and maintenance of equipment expenditures increased 9.2 per cent.

Transportation expense, the largest of the principal expense accounts, and the one that reflects the direct cost of handling and moving traffic, increased $355 million in 1948, or 10.2 per cent.

Table 10, the final table in the income series, shows the rate of return earned on net property investment. The rate is shown for 1929, and for each year from 1940 to 1948.

Net railway operating income for 1948 totaled $970 million, or 35 per cent less than the amount earned in 1942, the year of peak net earnings during the war. It was 16.4 per cent less than the annual average of $1,160 million earned during the war period.

**Table 10 — Rate of Return on Net Property Investment**

| Year | Net railway operating income (millions) | Rate of return—per cent on investment after depreciation |
|---|---|---|
| 1948 | $ 970 | *4.24 |
| 1947 | 781 | 3.41 |
| 1946 | 620 | 2.75 |
| 1945 | 852 | 3.77 |
| 1944 | 1,106 | 4.71 |
| 1943 | 1,360 | 5.71 |
| 1942 | 1,485 | 6.30 |
| 1941 | 998 | 4.28 |
| 1940 | 682 | 2.93 |
| 1929 | 1,252 | 5.24 |

*Based on investment at beginning of 1948.

Based on net property investment (including material and supplies and cash), after deducting accrued depreciation and amortization, the rate of return in 1948 was 4.24 per cent. This was better than the return earned in any of the preceding three years, but compares less favorably with the war period, when the average was 4.97 per cent. The corresponding return for 1929 was 5.24 per cent.

## *Receiverships and Trusteeships*

At the end of 1948, 43 railroad companies operating 13,285 miles of road were in the hands of receivers and trustees. This was 9 fewer companies than at the end of 1947, when 22,750 miles were similarly situated. Of the total number of railroads in the hands of the courts as of December 31, 1948, two Class I and four smaller lines were in the hands of receivers, while 13 Class I and 24 smaller lines were in the hands of trustees. The principal change during the year was the emergence from court jurisdiction of the Chicago, Rock Island & Pacific and the Central of Georgia.

Table 11 shows gross expenditures for additions and betterments to railway property, and purchases of fuel, material and supplies, for ten years 1939 to 1948, inclusive. These expenditures were, of course, affected by rising price levels in 1948.

Capital expenditures in 1948 are estimated at $1,250 million, a considerable increase compared with $865 million in 1947. It represents the largest amount expended in any one year on record, exceeding the previous high of $1,059 million in 1923. About 74 per cent of the 1948 expenditures was devoted to equipment and 26 per cent to roadway and structures.

**Table 11 — Capital Expenditures and Purchases**

| Year | Gross capital expenditures (thousands) | Purchases of fuel material and supplies (thousands) |
|---|---|---|
| 1948 | $1,250,000 | $2,250,000 |
| 1947 | 864,689 | 1,909,209 |
| 1946 | 561,957 | 1,570,555 |
| 1945 | 562,980 | 1,572,404 |
| 1944 | 560,112 | 1,610,529 |
| 1943 | 454,282 | 1,394,281 |
| 1942 | 534,897 | 1,259,811 |
| 1941 | 543,021 | 1,161,274 |
| 1940 | 429,147 | 854,463 |
| 1939 | 262,029 | 769,314 |
| Total 10 years | $6,023,114 | $14,351,840 |

Purchases of fuel, material and supplies in 1948 are estimated at $2,250 million, an increase of 18 per cent over the 1947 total. This marks the first year in which railroad purchases for current use and consumption exceeded the two-billion dollar level.

## *Railway Equipment*

The equipment situation in 1948 showed improvement, even though the goal of 10,000 new freight cars per month was not attained. Approximately 100,000 new freight cars, 1,450 new locomotives, and 1,100 new passenger-train cars were installed by the railroads in 1948. For the first time since the end of the war, the number of freight cars installed exceeded the number retired, so that the number of cars in service increased by about 25,000 during the year.

Table 12 shows railroad ownership of equipment, 1942 to 1948. Installations of new equipment, and the number of new units on order at the end of the year, are also shown.

**Table 12 — Equipment Ownership and Installation**

| | Ownership at end of year | Installed during year | On order at end of year |
|---|---|---|---|
| Steam Locomotives: | | | |
| 1948 (Dec. 1) | 32,854 | 80* | 78 |
| 1947 | 34,800 | 72 | 30 |
| 1946 | 37,255 | 83 | 64 |
| 1945 | 38,683 | 109 | 92 |
| 1944 | 39,451 | 329 | 66 |
| 1943 | 39,501 | 429 | 339 |
| 1942 | 39,157 | 308 | 355 |
| Diesel and Electric Locomotives: | | | |
| 1948 (Dec. 1) | 6,201 | 1,236* | 1,615 |
| 1947 | 4,964 | 771 | 1,196 |
| 1946 | 4,222 | 480 | 540 |
| 1945 | 3,730 | 534 | 379 |
| 1944 | 3,233 | 609 | 402 |
| 1943 | 2,638 | 344 | 616 |
| 1942 | 2,307 | 404 | 533 |
| Freight-carrying cars: | | | |
| 1948 (Dec. 1) | 1,754,852 | 93,839* | 96,705 |
| 1947 | 1,731,231 | 63,312 | 105,112 |
| 1946 | 1,739,930 | 40,377 | 63,829 |
| 1945 | 1,759,662 | 38,987 | 37,160 |
| 1944 | 1,764,109 | 40,392 | 36,597 |
| 1943 | 1,750,279 | 28,708 | 35,737 |
| 1942 | 1,739,111 | 63,009 | 27,061 |

*First 11 months.

During 1948, steam locomotive ownership continued to decline, whereas ownership of electric and Diesel-electric locomotives maintained the upward trend of recent years. The number of steam locomotives owned on November 30, 1948, was 1,946 less than on December 31, 1947, while the number of electric and Diesel locomotives increased by 1,237. Since the end of 1942, ownership of steam locomotives has decreased by 6,303, while there has been a net increase of 3,894 Diesel and electric locomotives. These figures are expressed in terms of numbers, and do not take into account the great efficiency of the modern Diesel locomotive, compared with that of the less modern steam locomotive which it replaces.

Despite efforts of the railroads, private car builders, and the Office of Defense Transportation, freight car installations have lagged behind the goal of 10,000 cars per month, which was set as a minimum by the Department of Commerce and the O.D.T. This monthly goal was approached several times, and slightly exceeded once, during 1948, but there has been a considerable deficiency below that goal, when the whole period since January 1, 1947, is taken into account.

Installations of new freight cars during the first 11 months of 1948 totaled 93,839. At that rate, installations for the year 1948 as a whole will exceed 100,000 cars, a greater number than in any year since 1926. As of December 1, 1948, there were 96,705 new freight cars on order. Including orders of private car lines, the total number of new cars on order on that date was 106,402. Freight car ownership at the end of November, 1948, totaled 1,754,852, a net increase of 23,621 cars over those owned at the end of 1947.

This moderate gain in freight car ownership has helped to relieve car shortages. The maximum daily shortage in 1948, occurring during the week of October 30, was 22,091 cars. This compares with a maximum in 1947 of 41,178 cars for the week of October 18. Freight car shortages continued throughout 1948, though to a lesser degree than in 1947. The demand for box cars was again heavy, and the bulk of the shortages occurred in that type of car. Coal cars were also in heavy demand. Locomotive supply was adequate, and stored serviceable units offered a margin of safety throughout the year. Unserviceable freight cars rose from 4.3 per cent at the beginning of the year to a high of 5.2 per cent on July 15. It then decreased to 4.7 per cent on December 1. The proportion of unserviceable locomotives increased from 7.1 per cent on January 1, 1948, to 7.9 per cent on December 1.

Although the freight car situation improved during 1948, more box and gondola cars are needed. On December 1, 1948, the railroads had on order 21,852 gondolas and 18,561 plain box cars. Gondola retirements in 1947 exceeded installations by 16,446 cars, and for the first 11 months of 1948 by 5,912. In the case of box cars, retirements exceeded installations in 1947 by 1,713 cars, but in the first 11 months of 1948 the reverse was true, with installations exceeding retirements by 6,262 cars. Ownership as of November 30, 1948, was 681,508 box cars (excluding auto box) and 306,103 gondolas.

Since the end of the war, the railroads have placed orders for 3,766 passenger-train cars of all types, and 866 were on order at the end of the war, making a total of 4,632 cars. Of this total, 2,593, or 56.0 per cent, have been installed. There is still need for additional modern cars, if the railroads are to compete successfully for passenger traffic. On December 1, 1948, 2,039 passenger-train cars were on order. Total ownership has increased slightly since the end of 1946, from 39,155 to 39,364 at the end of November, 1948.

New passenger-train equipment of all types installed by the railroads during the first 11 months of 1948 totaled 1,068 units, of which 212 were coach or coach combinations, 295 were sleepers, 121 were dining cars, 97 were parlor, club, and lounge cars, and 313 were baggage, express and postal. The remaining 30 were rail motor and miscellaneous units.

Revenue per ton-mile averaged 1.238 cents during the first 9 months of 1948, and revenue per passenger-mile averaged 2.294 cents. Table 13 shows the averages for 1929, and for each year from 1940 to 1948.

**Table 13 — Revenue per Unit of Traffic**

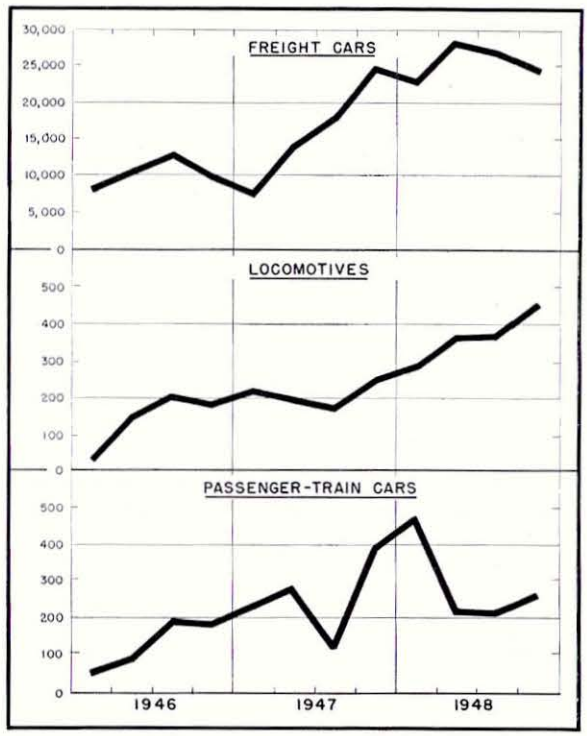
| Year | Per ton-mile (cents) | Per passenger-mile (cents) |
|---|---|---|
| 1948 (9 mos.) | 1.238 | 2.294 |
| 1947 | 1.076 | 2.097 |
| 1946 | .978 | 1.947 |
| 1945 | .959 | 1.871 |
| 1944 | .949 | 1.874 |
| 1943 | .933 | 1.882 |
| 1942 | .932 | 1.916 |
| 1941 | .935 | 1.753 |
| 1940 | .945 | 1.754 |
| 1929 | 1.076 | 2.808 |

Average revenue per ton-mile in 1948 was higher than in 1947, due to freight rate increases which became effective during those two years. It was higher,

CHART B

**NEW EQUIPMENT INSTALLATIONS, BY QUARTERS**

1946-1948



in fact, than in any year since 1921, when the average stood at 1.275 cents. Average revenue per passenger-mile also increased, attaining an average of 2.294 cents during the first 9 months of the year. This was higher than in any year since 1931, when the average was 2.513 cents.

For the month of September, 1948, the averages were 1.256 cents per ton-mile, and 2.37 cents per passenger-mile.

Neither of these charges for rail transportation service, however, has increased in proportion to the increased cost of operation in recent years.

## Operating Efficiency and Economy

The next four tables compare significant performance averages for 1948 with those of the years 1940 to 1947. Comparable figures for 1929 are also shown.

It should be recognized that traffic volume influences some of those averages. All things equal, performance will usually show to better advantage in periods of high rather than low traffic volume. The continued high level of freight traffic handled in 1948, though slightly below the 1947 aggregate, reflects that fact.

Ton-miles per freight train hour, which combines both load and speed factors, is a highly significant freight performance average. It shows the unit output per hour of freight train operation. The average is computed on two bases: (1) gross ton-miles of cars and contents per freight train-hour, and (2) net ton-miles (lading only) per freight train-hour. These averages are shown in Table 14. New records were established in 1948 in each of the two categories.

**Table 14 — Ton-miles per Freight Train-hour**

| Year | Gross ton-miles | Net ton-miles |
|---|---|---|
| 1948 (10 mos.) | 39,782 | 18,768 |
| 1947 | 38,462 | 18,126 |
| 1946 | 37,057 | 17,173 |
| 1945 | 36,954 | 17,482 |
| 1944 | 37,298 | 17,623 |
| 1943 | 35,970 | 16,997 |
| 1942 | 35,503 | 16,132 |
| 1941 | 34,684 | 14,930 |
| 1940 | 33,811 | 14,028 |
| 1929 | 24,539 | 10,580 |

Certain other significant operating factors are shown in Table 15, daily mileage averages for locomotives and freight cars. Heavy traffic caused by the war called for long hauls and caused sharp advances in the number of miles run each day by both locomotives and cars. As some of these favorable factors have disappeared since the war, these averages have tended to recede. Current performance is, however, well above that of prewar days.

Freight locomotives in 1948 averaged 2.2 per cent fewer miles per day than in the year 1947, whereas passenger locomotives showed an increase of 1.0 per cent. Freight car mileage per car-day decreased 2.9 per cent.

**Table 15 — Daily Mileage of Locomotives and Cars**

| Year | Freight Locomotives | Passenger Locomotives | Freight Cars |
|---|---|---|---|
| 1948 (10 mos.) | 117.4 | 220.9 | 47.4 |
| 1947 | 120.0 | 218.7 | 48.8 |
| 1946 | 115.9 | 221.8 | 45.2 |
| 1945 | 118.4 | 226.9 | 49.3 |
| 1944 | 122.8 | 222.9 | 51.9 |
| 1943 | 124.5 | 220.9 | 51.0 |
| 1942 | 122.4 | 206.8 | 48.8 |
| 1941 | 116.4 | 195.6 | 43.7 |
| 1940 | 107.5 | 190.8 | 38.9 |
| 1929 | 91.2 | 164.5 | 34.4 |

Average train speeds, which were the only performance averages to fall off during the war, have since turned up again. The averages for 1948, 1947 and earlier years are shown in Table 16.

Average freight train speed in 1948 increased 0.6 per cent over 1947. Passenger train speed increased 1.6 per cent.

**Table 16 — Average Train Speed (m. p. h.)**

| Year | Freight trains | Passenger trains |
|---|---|---|
| 1948 (10 mos.) | 16.1 | 38.1 |
| 1947 | 16.0 | 37.5 |
| 1946 | 16.0 | 36.7 |
| 1945 | 15.7 | 35.7 |
| 1944 | 15.7 | 35.8 |
| 1943 | 15.4 | 35.7 |
| 1942 | 15.8 | 36.9 |
| 1941 | 16.5 | 37.6 |
| 1940 | 16.7 | 37.3 |
| 1929 | 13.2 | ... |

Average loading per car and per train in freight service increased in 1948, while the corresponding passenger service averages continued to decline. Table 17 shows the average load per car and per train in the freight and passenger services.

**Table 17 — Average Train and Car Loads**

| | Freight Service | | Passenger Service | |
|---|---|---|---|---|
| Year | Net tons per train | Net tons per car | Passengers per train | Passengers per car |
| 1948 (10 mos.) | 1,181 | 32.9 | 103.0* | 19.8* |
| 1947 | 1,146 | 32.6 | 110.7 | 21.0 |
| 1946 | 1,086 | 31.3 | 144.3 | 24.5 |
| 1945 | 1,129 | 32.2 | 190.5 | 30.2 |
| 1944 | 1,139 | 32.7 | 200.7 | 31.9 |
| 1943 | 1,116 | 33.3 | 189.5 | 31.1 |
| 1942 | 1,035 | 31.8 | 125.5 | 23.1 |
| 1941 | 915 | 28.5 | 73.2 | 15.8 |
| 1940 | 849 | 27.6 | 60.7 | 13.8 |
| 1929 | 804 | 26.9 | 55.0 | 12.5 |

*9 months.

In freight service, the increases in average loads for 1948 compared with 1947 were as follows: Net tons per train, 35 tons, or 3.1 per cent; net tons per car, 0.3 ton, or 0.9 per cent.

The average freight train load in 1948 (10 months) was the greatest on record, 1,181 tons, surpassing even the heavy trainloads of the war period.

In passenger service, the decreases in 1948 were 7.7 passengers per train, or 7.0 per cent; 1.2 passengers per car, or 5.7 per cent.

## Railroad Safety

Railroads experienced in 1948 one of the safest years in history, substantial reductions being recorded below 1947 in both fatal and non-fatal injuries to passengers, to employees, and to other persons. In fact, based on reports for the first 10 months of 1948, it appears likely that for the year as a whole the number of fatalities in railway accidents of all kinds will be fewer than for any year of record, notwithstanding the high level of traffic handled.

Having in mind that passenger traffic in 1948 was 11 per cent below 1947, the number of fatalities to passengers in the first 10 months of 1948 dropped to 40, a decline of 32 per cent below the number in the same months of 1947. Non-fatal injuries to passengers decreased from 3,504 in the 1947 period to 3.083 in the 1948 period, a reduction of 12 per cent.

Railroad employment was off about 2 per cent in 1948. The number of fatal injuries to employees declined by nearly 19 per cent in the first 10 months of the year, while non-fatal injuries were less by 13 per cent.

Notwithstanding the greater number of motor vehicles operating over the highways in 1948, the number of fatalities in highway grade accidents declined by 11 per cent in the first 10 months of the year. Non-fatal injuries in such accidents increased slightly, by 2.0 per cent.

Considering all fatal and non-fatal injuries, fatalities decreased in thefirst 10 months of 1948 by 9.3 per cent, while non-fatal injuries dropped 11.2 per cent.

Industrial developments toward the close of 1948 indicated a softening of demand for some lines of production, particularly in respect of nondurable and consumer goods. Employment decreased. The Federal Reserve Board index of industrial production, which for the first 9 months of the year showed an increase, from 185 in 1947 to 191 in 1948, seemed likely to flatten out during the final quarter.

Prices, too, moved in the direction of stabilization. The plateau still remained high, but the wholesale price index, which had risen steadily month by month to August, began a slight downward trend. The index for August was 169.5, compared with annual averages of 121.1 for 1946 and 152.1 for 1947. It declined to 168.7 in September, to 165.2 in October, and again to 163.9 in November. This decline was due to lowered farm product and food prices.

The cost of living index also exhibited a slight tendency downward. It reached its peak in August and September at 174.5 and declined slightly to 173.6 in October.

These developments, among others, led to considerable speculation as to industrial and price trends in 1949. On the whole, the consensus seemed to point to a downward trend in general production and employment, although not so great as to be labeled a recession.

In reaching this conclusion, a number of probable developments in 1949 were taken into account, such as continuance of the Marshall plan, heavy government expenditures for defense purposes, continued construction activities, and still unfilled consumer demand for such products as automobiles. Insofar as agricultural production can be visualized in advance, the crop outlook for 1949 seems to be good.

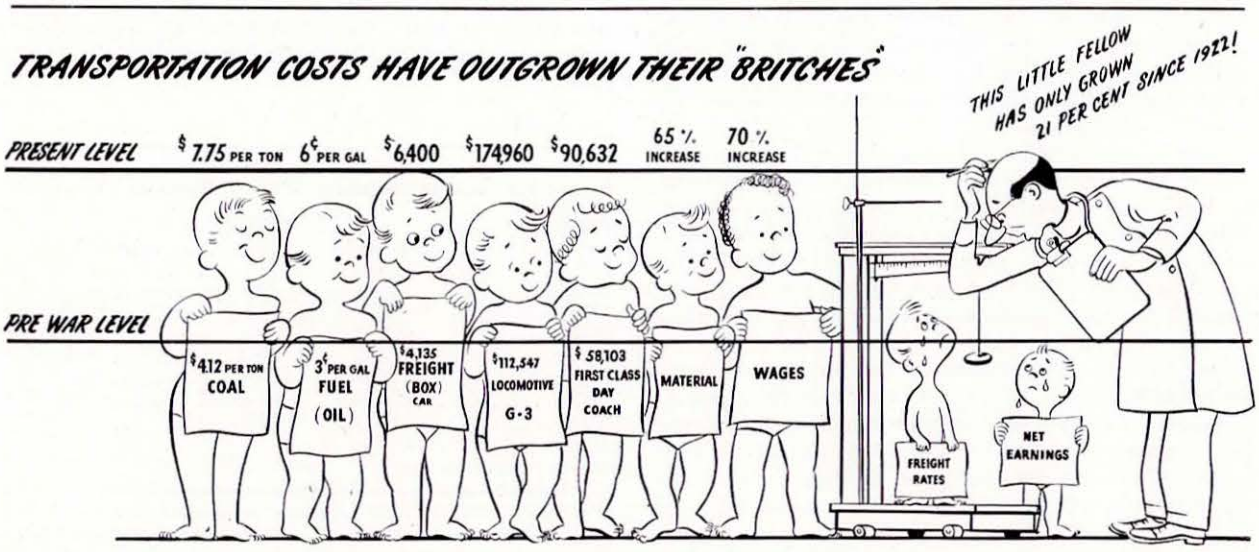
Those who have ventured to consider the prospects for the coming year have approached the subject with great caution, recognizing the many imponderables and uncertainties in both the domestic and the international situation. They have, however, reached the general conclusion that business will be good in 1949, and that, barring unforeseen crises in our relations to other countries, postwar activity and buying power will continue at reasonably satisfactory levels.

If the general prospect thus briefly analyzed becomes a reality, production, employment, and the national income should remain at relatively high levels in 1949. This, in turn, should result in a continued substantial demand for railroad service, and especially for freight service.

Estimates of railroad traffic in 1949 were submitted by the 34 representative railroad companies to the commission, in the course of the first round of hearings in Ex Parte No. 168, beginning November 30. These estimates, raised to a Class I level, indicated a decrease of 2½ per cent in ton-miles, 1949 compared with 1948, and a decrease of 8.7 per cent in passenger-miles.

Railroads made many forward steps in 1948 in the direction of a better plant and more efficient operations. These will continue into 1949. As President Faricy of the Association of American Railroads put it in his statement of June 14, 1948, before the House committee on interstate and foreign commerce.

> They (the railroads) are gaining in efficiency and carrying capacity with every day that goes by. They are concerned — deeply concerned — about the average age of their freight-car fleet, in view of the intensive use being made of these cars. That is why they will never relax their efforts to obtain more steel for more freight cars until car shortages pass into history. Yet the worst of the war-weary freight cars have now been culled out, and what remains are being repaired and rebuilt as fast as men, materials and money are available. The railroads have not broken down, and are not going to break down.




**The Canadian Pacific Puts Its Need for More Revenue in Cartoon Form**

# YEAR'S PURCHASES NEAR $3 BILLION

***Inventories rose 12 per cent last year — Crosstie purchases hit fast pace in last half of 1948 — Fuel buying heavy as storage capacities increased***

By J. W. MILLIKEN
Associate Editor, Purchases & Stores Department

**1948 RAILWAY PURCHASES****

| | Oct. '48 (000) | Nov. '48 (000) | Dec. '48 (000) | Cumulative total, 1948 (000) |
|---|---|---|---|---|
| Equipment* | $ 65,325 | $ 54,586 | $ 58,175 | $ 660,017 |
| Rail | 8,159 | 7,661 | 8,323 | 93,639 |
| Crossties | 9,907 | 8,756 | 8,517 | 88,100 |
| All other material | 110,145 | 102,149 | 106,651 | 1,215,687 |
| Total from manufacturers | $193,536 | $143,152 | $181,666 | $2,057,443 |
| Fuel | 66,048 | 63,843 | 70,069 | 828,630 |
| Grand total | $259,584 | $206,995 | $251,735 | $2,886,073 |

* Amount placed on order
** Subject to revision

For the third year since the end of the war, the Class I railroads of the United States have boosted expenditures for equipment, supplies and fuel above the $2 billion mark, the estimated total having reached $2,886,073,000 in the year just past. Of this sum, $2,057,443,000 was spent for equipment and other manufactured products.

While rising prices have played a part in raising railroad expenditures to such a high figure, a survey made by a committee of the Purchases and Stores Division of the Association of American Railroads indicates that the railroads actually are buying about 33 per cent more physical units of materials, supplies and fuel than they did in 1939. (For an abstract of this survey see *Railway Age* of July 10, 1948, page 147.) The increased volume of buying, in terms of dollars and also of physical units, reflects not only an increase in the minimum which the railroads need to keep operating but also their efforts to improve their facilities to match current demands for efficient transportation.

With the exception of crossties and equipment orders, all categories in the *Railway Age* breakdown of purchases showed rises in dollar volume during 1948. Crossties have been in rather short supply during a good part of the year, (see *Railway Age* of July 10, 1948, page 91) and their production has not reached the rate attained in 1947. Because of this production drop ties have not been available in adequate numbers. (The reasons for this production slump are outlined briefly in another article in this issue.)

Purchases of rail, on the other hand, have been up and down all year, but the estimated total at the end of December indicates that when the final figure is in the railroads will have spent slightly more for rail in 1948 than they did in 1947. Miscellaneous supply purchases were well above the 1947 level, having reached some $1,215,687,000, which is 17 per cent up from the $1,037,873,000 spent for similar materials in 1947.

The money value of expenditures for fuel in 1948 showed the greatest increase, from 1947, percentage-wise, of any category of purchases. Again, this was partly due to price increases, but not nearly as much as in 1947. Some indication of this may be seen in the fuel inventory figures, which have risen 69 per cent since October 1, 1947, despite the fact that Diesel fuel prices, for example, have shown a tendency to stabilize in the past few months. There is actually a larger supply of fuel on hand now than there was a year ago. This is particularly true of Diesel fuel.

The value of equipment orders fell off a little from those placed in the preceding year. As of December 15, 1948, the railroads had ordered about $660,017,000 worth of equipment. At the end of September last year these orders were running considerably ahead of the 1947 volume, but they fell off rather abruptly in October, November and December, whereas the last three months of 1947 were very heavy ordering months. In the last three months of 1948 (first 20 days of December) the railroads ordered 23,858 freight-train cars whose estimated cost was $102,440,000; 308 Diesel-electric locomotive units, the total cost of which will be approximately $45,041,000; and 6 passenger-train cars which will cost approximately $600,000.

Of the $660,017,000 earmarked for equipment in the year just past, an estimated $206,819,000 has been assigned for motive power, which includes 2,524 Diesel and 69 steam units, $47,525,000 for 431 passenger-train cars, and $405,673,000 for 99,863 freight-train cars.

**Annual Purchases of Equipment—Class I Railroads**

| Year§ | | Year§ | |
|---|---|---|---|
| 1930 | $146,471 | 1940 | $264,943 |
| 1931 | 28,873 | 1941 | 414,690 |
| 1932 | 2,623 | 1942 | 325,000† |
| 1933 | 5,857 | 1943 | 248,000† |
| 1934 | 66,850 | 1944 | 255,000 |
| 1935 | 35,696 | 1945 | 320,100 |
| 1936 | 240,594 | 1946 | 629,510 |
| 1937 | 194,153 | 1947 | 701,616 |
| 1938 | 74,006 | 1948 | 660,017* |
| 1939 | 188,838 | | |

* Preliminary Estimates.
§ Estimated value of orders for new locomotives and cars.
† Estimated value of orders for new locomotives and cars built by equipment builders and placed in service during 1942 and 1943.

### 1948 PURCHASES OF MANUFACTURED GOODS (Excl. Equipment and Fuel)*

| December '48 Compared to Other Months '48 (000) | | | December '48 Compared to Other Months '48 (000) | | | Twelve Month Totals '48 And Other Years (000) | | |
|---|---|---|---|---|---|---|---|---|
| Month | Amt. | % Change | Month | Amt. | % Change | Year | Amt. | % Change |
| Jan. | $105,827 | +17 | July | $114,442 | + 8 | 1942 | $833,476 | +68 |
| Feb. | 103,390 | +19 | Aug. | 119,573 | + 3 | 1943 | 866,985 | +61 |
| Mar. | 121,557 | + 2 | Sept. | 119,445 | + 3 | 1944 | 1,024,697 | +36 |
| Apr. | 115,904 | + 7 | Oct. | 128,211 | — 4 | 1945 | 1,017,249 | +37 |
| May | 108,914 | +13 | Nov. | 118,566 | + 4 | 1946 | 1,017,402 | +37 |
| June | 118,106 | + 5 | Dec. | 123,491 | | 1947 | 1,217,579 | +15 |
| | | | | | | 1948 | 1,397,426 | |

### 1948 PURCHASES OF RAIL*

| December '48 Compared to Other Months '48 (000) | | | December '48 Compared to Other Months '48 (000) | | | Twelve Month Totals '48 And Other Years (000) | | |
|---|---|---|---|---|---|---|---|---|
| Month | Amt. | % Change | Month | Amt. | % Change | Year | Amt. | % Change |
| Jan. | $7,409 | +12 | July | $7,012 | +19 | 1942 | $55,647 | +68 |
| Feb. | 8,200 | + 2 | Aug. | 9,049 | — 8 | 1943 | 60,074 | +56 |
| Mar. | 8,661 | — 4 | Sept. | 9,215 | —10 | 1944 | 75,763 | +24 |
| Apr. | 5,431 | +53 | Oct. | 8,159 | + 2 | 1945 | 77,038 | +22 |
| May | 6,716 | +24 | Nov. | 7,661 | + 9 | 1946 | 65,302 | +43 |
| June | 7,803 | + 7 | Dec. | 8,323 | | 1947 | 87,608 | + 7 |
| | | | | | | 1948 | 93,639 | |

### 1948 PURCHASES OF CROSSTIES*

| December '48 Compared to Other Months '48 (000) | | | December '48 Compared to Other Months '48 (000) | | | Twelve Month Totals '48 And Other Years (000) | | |
|---|---|---|---|---|---|---|---|---|
| Month | Amt. | % Change | Month | Amt. | % Change | Year | Amt. | % Change |
| Jan. | $5,623 | +51 | July | $7,611 | +12 | 1942 | $63,153 | +40 |
| Feb. | 4,630 | +84 | Aug. | 9,106 | — 6 | 1943 | 83,402 | + 6 |
| Mar. | 5,861 | +45 | Sept. | 8,999 | — 5 | 1944 | 85,202 | + 3 |
| Apr. | 5,933 | +44 | Oct. | 9,907 | —14 | 1945 | 77,389 | +14 |
| May | 6,129 | +39 | Nov. | 8,756 | — 3 | 1946 | 88,478 | — |
| June | 7,028 | +21 | Dec. | 8,517 | | 1947 | 92,098 | — 4 |
| | | | | | | 1948 | 88,100 | |

### 1948 PURCHASES OF OTHER MATERIALS*

| December '48 Compared to Other Months '48 (000) | | | December '48 Compared to Other Months '48 (000) | | | Twelve Month Totals '48 And Other Years (000) | | |
|---|---|---|---|---|---|---|---|---|
| Month | Amt. | % Change | Month | Amt. | % Change | Year | Amt. | % Change |
| Jan. | $ 92,795 | +15 | July | $ 99,819 | + 7 | 1942 | $714,676 | +70 |
| Feb. | 90,560 | +18 | Aug. | 101,418 | + 5 | 1943 | 723,509 | +68 |
| Mar. | 107,035 | — | Sept. | 101,231 | + 5 | 1944 | 863,732 | +41 |
| Apr. | 104,540 | + 2 | Oct. | 110,145 | — 3 | 1945 | 862,822 | +41 |
| May | 96,069 | +11 | Nov. | 102,149 | + 4 | 1946 | 863,622 | +41 |
| June | 103,275 | + 3 | Dec. | 106,651 | | 1947 | 1,037,873 | +17 |
| | | | | | | 1948 | 1,215,687 | |

### 1948 PURCHASES OF FUEL*

| December '48 Compared to Other Months '48 (000) | | | December '48 Compared to Other Months '48 (000) | | | Twelve Month Totals '48 And Other Years (000) | | |
|---|---|---|---|---|---|---|---|---|
| Month | Amt. | % Change | Month | Amt. | % Change | Year | Amt. | % Change |
| Jan. | $73,733 | — 5 | July | $68,257 | + 3 | 1942 | $426,335 | +94 |
| Feb. | 70,438 | — 1 | Aug. | 70,679 | — 1 | 1943 | 527,296 | +57 |
| Mar. | 69,181 | + 1 | Sept. | 70,086 | — | 1944 | 585,832 | +41 |
| Apr. | 58,478 | +20 | Oct. | 66,048 | + 6 | 1945 | 555,155 | +49 |
| May | 73,232 | — 4 | Nov. | 63,843 | +10 | 1946 | 553,153 | +50 |
| June | 74,586 | — 6 | Dec. | 70,069 | | 1947 | 691,630 | +20 |
| | | | | | | 1948 | 828,630 | |

### 1948 TOTAL PURCHASES* (Excl. Equip.)

| December '48 Compared to Other Months '48 (000) | | | December '48 Compared to Other Months '48 (000) | | | Twelve Month Totals '48 And Other Years (000) | | |
|---|---|---|---|---|---|---|---|---|
| Month | Amt. | % Change | Month | Amt. | % Change | Year | Amt. | % Change |
| Jan. | $179,560 | + 8 | July | $182,699 | + 6 | 1942 | $1,259,811 | +76 |
| Feb. | 173,828 | +11 | Aug. | 190,252 | + 2 | 1943 | 1,394,281 | +60 |
| Mar. | 190,738 | + 1 | Sept. | 189,531 | + 2 | 1944 | 1,610,529 | +38 |
| Apr. | 174,382 | +11 | Oct. | 194,259 | — | 1945 | 1,572,404 | +42 |
| May | 182,146 | + 6 | Nov. | 182,409 | + 6 | 1946 | 1,570,555 | +42 |
| June | 192,692 | — | Dec. | 193,560 | | 1947 | 1,909,209 | +17 |
| | | | | | | 1948 | 2,226,056 | |

*November and December, 1948, figures are preliminary and 1948 totals are subject to revision.

dividends were being paid on approximately 75 per cent of all issued railroad stock. The 1948 payments on many issues likewise were doubtless below what the owners would consider satisfactory. Nevertheless, the railroads' 1948 dividend payment record is a clear indication of their willingness to make some distribution of profits to stockholders when money for such distribution is available. That record should be adequate notice to present or prospective investors that future dividends on railroad stocks depend not so much on the railroads themselves as on public policies which will permit the roads to obtain a fair share of available traffic at reasonable rates, and to move that traffic without the burden of excessive costs.

Two major systems—the Chicago, Rock Island & Pacific and the Central of Georgia, with a combined total of nearly 9,500 miles of line—emerged from receivership during the year. Only the Wyoming, with 29 miles of line, was placed in receivership.

### Receiverships and Reorganizations

Thus, both the number of companies and the total mileage in receivership or trusteeship at the end of the year showed a continuation of the downward trend which has now lasted without interruption since 1938 as to the number of companies, and 1939 as to total mileage. Mileage in the hands of receivers as of De-

## Representative Equipment Trust Issues Sold in 1948

| Road | Maturity | Amount | Int. Rate % | Sold to Banker: Price | Sold to Banker: Cost | Purchaser |
|---|---|---|---|---|---|---|
| Atlantic Coast Line—Louisville & Nashville | 1949–1963 | $1,320,000 | 2⅜ | 99.217 | 2.49 | R. W. Pressprich & Co. and Freeman & Co. |
| Baltimore & Ohio, Ser. X | 1949–1958 | 4,000,000 | 2½ | 99.723 | 2.56 | Salomon Bros. & Hutzler, et al. |
| Ser. Y | 1949–1958 | 4,500,000 | 2⅜ | 99.22 | 2.54 | Harris, Hall & Co., Inc., et al. |
| Ser. Z | 1949–1958 | 5,060,000 | 2¼ | 99.257 | 2.40 | Salomon Bros. & Hutzler, et al. |
| Bangor & Aroostook, Ser. M | 1949–1958 | 700,000 | 2⅛ | 98.612 | 2.41 | R. W. Pressprich & Co. |
| Ser. N | 1949–1963 | 2,100,000 | 2½ | 98.3199 | 2.77 | Halsey, Stuart & Co., Inc. |
| Central of New Jersey, Ser. A | 1949–1963 | 1,500,000 | 2⅝ | 99.5379 | 2.70 | Harris, Hall & Co., Inc., et al. |
| Central of Pennsylvania, Ser. A | 1949–1963 | 1,395,000 | 2⅝ | 99.189 | 2.75 | Halsey, Stuart & Co., Inc. |
| Chesapeake & Ohio | 1949–1958 | 4,900,000 | 2 | 99.108 | 2.18 | Salomon Bros. & Hutzler, et al. |
| | 1949–1958 | 4,750,000 | 2 | 99.4299 | 2.11 | Harris, Hall & Co., Inc., et al. |
| | 1949–1958 | 5,500,000 | 2⅛ | 99.556 | 2.21 | Harris, Hall & Co., Inc., et al. |
| | 1949–1958 | 4,450,000 | 2¼ | 99.297 | 2.40 | Harris, Hall & Co., Inc., et al. |
| | 1949–1958 | 3,500,000 | 2⅜ | 99.5101 | 2.47 | Halsey, Stuart & Co., Inc., et al. |
| | 1949–1958 | 3,600,000 | 2⅝ | 99.4 | 2.74 | Halsey, Stuart & Co., Inc., et al. |
| | 1949–1958 | 5,500,000 | 2⅝ | 99.4 | 2.74 | Halsey, Stuart & Co., Inc., et al. |
| | 1949–1958 | 4,200,000 | 2¼ | 99.52 | 2.35 | Salomon Bros. & Hutzler, et al. |
| Chicago & Eastern Illinois, Ser. F | 1949–1963 | 2,460,000 | 2⅝ | 99.33 | 2.73 | Salomon Bros. & Hutzler, et al. |
| Chicago & North Western | 1949–1963 | 5,340,000 | 2⅝ | 99.409 | 2.46 | Harris, Hall & Co., Inc., et al. |
| | 1949–1963 | 5,325,000 | 2⅝ | 99.439 | 2.46 | Kidder, Peabody & Co., et al. |
| Chicago, Burlington & Quincy | 1948–1963 | 7,230,000 | 2¼ | 99.29 | 2.36 | First Boston Corp., et al. |
| Chicago, Indianapolis & Louisville | 1949–1963 | 1,800,000 | 2⅝ | 98.16 | 2.91 | Salomon Bros. & Hutzler, et al. |
| Chicago, Mil., St. P. & Pac., Ser. BB | 1948–1958 | 2,640,000 | 2⅛ | 99.524 | 2.22 | Harris, Hall & Co., Inc., et al. |
| Ser. CC | 1948–1958 | 5,040,000 | 2¼ | 99.701 | 2.31 | Salomon Bros. & Hutzler, et al. |
| Ser. DD | 1948–1958 | 7,120,000 | 2 | 99.2265 | 2.15 | Halsey, Stuart & Co., Inc., et al. |
| Ser. EE | 1949–1958 | 3,820,000 | 2 | 99.0267 | 2.19 | Harris, Hall & Co., Inc., et al. |
| Ser. FF | 1949–1958 | 6,600,000 | 2¼ | 99.4317 | 2.37 | Harriman Ripley & Co., Inc. and Lehman Bros. |
| Chicago, Rock Is. & Pac., Ser. A | 1949–1963 | 4,590,000 | 2¼ | 99.4103 | 2.34 | Halsey, Stuart & Co., Inc. |
| Ser. B | 1949–1958 | 3,420,000 | 2¼ | 99.253 | 2.41 | Salomon Bros. & Hutzler |
| Chicago, St. P., Minn. & Omaha | 1949–1963 | 2,100,000 | 2⅝ | 99.46 | 2.71 | Salomon Bros. & Hutzler, et al. |
| Delaware, Lack. & Western, Ser. G | 1948–1958 | 1,600,000 | 2¾ | 99.6647 | 2.81 | Halsey, Stuart & Co., Inc., et al. |
| Denver & Rio Grande Western, Ser. M. | 1948–1963 | 4,530,000 | 2½ | 99.4099 | 2.59 | Harriman Ripley & Co., Inc. and Lehman Bros. |
| Erie | 1949–1958 | 4,850,000 | 2¼ | 99.21 | 2.41 | First Boston Corporation, et al. |
| Great Northern | 1949–1963 | 12,720,000 | 2⅝ | 99.608 | 2.44 | Halsey, Stuart & Co., Inc., et al. |
| Illinois Central, Ser. X | 1948–1957 | 3,200,000 | 2½ | 99.3537 | 2.65 | Gregory & Son, Inc. |
| Ser. Y | 1948–1957 | 4,997,000 | 2¼ | 99.4599 | 2.37 | Halsey, Stuart & Co., Inc., et al. |
| Ser. Y | 1949–1957 | 3,240,000 | 2⅛ | 99.092 | 2.34 | Harriman Ripley & Co., Inc. and Lehman Bros. |
| Ser. Z | 1948–1958 | 14,000,000 | 2½ | 99.405 | 2.63 | Halsey, Stuart & Co., Inc., et al. |
| Ser. AA | 1949–1958 | 5,500,000 | 2¼ | 99.272 | 2.41 | Halsey, Stuart & Co., Inc., et al. |
| Illinois Terminal, Ser. D | 1949–1958 | 1,000,000 | 2½ | 99.85 | 2.53 | Mercantile-Commerce Bank & Trust Co., et al. |
| International-Great Northern, Ser. AA | 1949–1958 | 1,640,000 | 2⅝ | 99.162 | 2.80 | Halsey, Stuart & Co., Inc. |
| Long Island, Ser. K | 1949–1963 | 4,035,000 | 2⅝ | 99.2699 | 2.74 | Harriman Ripley & Co., Inc. and Lehman Bros. |
| Louisiana & Arkansas, Ser. C | 1949–1958 | 1,760,000 | 2⅝ | 100.15 | 2.59 | Halsey, Stuart & Co., Inc. |
| Missouri-Kansas-Texas | 1948–1963 | 1,620,000 | 2½ | 98.937 | 2.67 | Freeman & Co., et al. |
| Missouri Pacific, Ser. JJ | 1949–1958 | 4,330,000 | 2¼ | 99.181 | 2.42 | Halsey, Stuart & Co., Inc., et al. |
| Ser. KK | 1949–1958 | 4,700,000 | 2⅝ | 99.126 | 2.56 | Halsey, Stuart & Co., Inc., et al. |
| New York Central | 1949–1958 | 12,600,000 | 2⅝ | 99.429 | 2.49 | Harriman Ripley & Co., Inc. and Lehman Bros. |
| | 1949–1958 | 13,800,000 | 2½ | 99.261 | 2.65 | Harriman Ripley & Co., Inc., and Lehman Bros. |
| New York, Chicago & St. Louis | 1949–1958 | 1,400,000 | 2⅛ | 99.256 | 2.27 | Halsey, Stuart & Co., Inc. |
| | 1949–1963 | 4,050,000 | 2½ | 98.32 | 2.76 | Halsey, Stuart & Co., Inc., et al. |
| | 1949–1958 | 4,600,000 | 2¼ | 99.354 | 2.39 | Salomon Bros. & Hutzler, et al. |
| New York, New Haven & Hartford | 1949–1963 | 6,480,000 | 2⅝ | 98.58466 | 2.84 | Halsey, Stuart & Co., Inc., et al. |
| | 1949–1963 | 4,050,000 | 2½ | 98.32 | 2.76 | Halsey, Stuart & Co., Inc., et al. |
| Pennsylvania, Ser. S | 1948–1962 | 10,890,000 | 2⅜ | 99.329 | 2.48 | Salomon Bros. & Hutzler, et al. |
| Ser. S | 1948–1962 | 10,995,000 | 2⅜ | 99.609 | 2.43 | Halsey, Stuart & Co., Inc., et al. |
| Ser. T | 1949–1963 | 9,600,000 | 2½ | 99.3899 | 2.59 | Halsey, Stuart & Co., Inc., et al. |
| Ser. T | 1949–1963 | 9,900,000 | 2½ | 99.145 | 2.63 | Harriman Ripley & Co., Inc., and Lehman Bros. |
| Ser. U | 1949–1963 | 9,675,000 | 2½ | 99.53 | 2.57 | Salomon Bros. & Hutzler, et al. |
| Ser. V | 1949–1963 | 7,935,000 | 2½ | 99.0399 | 2.65 | Halsey, Stuart & Co., Inc., et al. |
| Reading, Ser. O | 1948–1958 | 4,800,000 | 2 | 99.19 | 2.17 | Kidder, Peabody & Co. and Dick & Merle-Smith |
| Ser. P | 1949–1958 | 3,440,000 | 2¼ | 99.42 | 2.37 | Salomon Bros. & Hutzler, et al. |
| Richmond, Fredericksburg & Potomac | 1948–1958 | 2,400,000 | 2¼ | 100.319 | 2.18 | Halsey, Stuart & Co., Inc. |
| St. Louis, Brownsville & Mex., Ser. AA | 1949–1958 | 1,580,000 | 2⅝ | 99.162 | 2.80 | Halsey, Stuart & Co., Inc. |
| St. Louis-San Francisco, Ser. A | 1949–1963 | 8,280,000 | 2¾ | 99.385 | 2.82 | Halsey, Stuart & Co., Inc., et al. |
| Ser. B | 1949–1963 | 5,550,000 | 2⅝ | 99.22 | 2.74 | Salomon Bros. & Hutzler, et al. |
| Ser. C | 1949–1963 | 4,260,000 | 2½ | 99.2655 | 2.61 | Harris, Hall & Co., Inc., et al. |
| Seaboard Air Line, Ser. D | 1949–1963 | 4,200,000 | 2⅝ | 99.55 | 2.69 | Salomon Bros. & Hutzler, et al. |
| Southern, Ser. NN | 1948–1958 | 10,680,000 | 2⅛ | 99.20699 | 2.28 | Harriman Ripley & Co., Inc., and Lehman Bros. |
| Ser. OO | 1949–1958 | 8,700,000 | 2¼ | 99.405 | 2.38 | Halsey, Stuart & Co., Inc., et al. |
| Southern Pacific, Ser. X | 1949–1958 | 11,100,000 | 2⅛ | 99.191 | 2.29 | Salomon Bros. & Hutzler, et al. |
| Ser. Y | 1949–1958 | 11,050,000 | 2¼ | 99.433 | 2.37 | First Boston Corp., et al. |
| Tennessee Central, Ser. E | 1949–1958 | 314,000 | 3 | 100.00 | .... | Reconstruction Finance Corp. |
| Western Maryland, Ser. M | 1949–1958 | 5,800,000 | 2¼ | 99.169 | 2.42 | Halsey, Stuart & Co., Inc. |
| Wheeling & Lake Erie, Ser. P | 1949–1958 | 3,200,000 | 2 | 99.14 | 2.17 | Harris, Hall & Co., Inc., et al. |
| Ser. Q | 1949–1958 | 1,600,000 | 2⅛ | 99.3819 | 2.25 | Halsey, Stuart & Co., Inc. |

### 1948 PURCHASES OF MANUFACTURED GOODS (Excl. Equipment and Fuel)*

| December '48 Compared to Other Months '48 (000) | | | December '48 Compared to Other Months '48 (000) | | | Twelve Month Totals '48 And Other Years (000) | | |
|---|---|---|---|---|---|---|---|---|
| Month | Amt. | % Change | Month | Amt. | % Change | Year | Amt. | % Change |
| Jan. | $105,827 | +17 | July | $114,442 | + 8 | 1942 | $833,476 | +68 |
| Feb. | 103,390 | +19 | Aug. | 119,573 | + 3 | 1943 | 866,985 | +61 |
| Mar. | 121,557 | + 2 | Sept. | 119,445 | + 3 | 1944 | 1,024,697 | +36 |
| Apr. | 115,904 | + 7 | Oct. | 128,211 | — 4 | 1945 | 1,017,249 | +37 |
| May | 108,914 | +13 | Nov. | 118,566 | + 4 | 1946 | 1,017,402 | +37 |
| June | 118,106 | + 5 | Dec. | 123,491 | | 1947 | 1,217,579 | +15 |
| | | | | | | 1948 | 1,397,426 | |

### 1948 PURCHASES OF RAIL*

| December '48 Compared to Other Months '48 (000) | | | December '48 Compared to Other Months '48 (000) | | | Twelve Month Totals '48 And Other Years (000) | | |
|---|---|---|---|---|---|---|---|---|
| Month | Amt. | % Change | Month | Amt. | % Change | Year | Amt. | % Change |
| Jan. | $7,409 | +12 | July | $7,012 | +19 | 1942 | $55,647 | +68 |
| Feb. | 8,200 | + 2 | Aug. | 9,049 | — 8 | 1943 | 60,074 | +56 |
| Mar. | 8,661 | — 4 | Sept. | 9,215 | —10 | 1944 | 75,763 | +24 |
| Apr. | 5,431 | +53 | Oct. | 8,159 | + 2 | 1945 | 77,038 | +22 |
| May | 6,716 | +24 | Nov. | 7,661 | + 9 | 1946 | 65,302 | +43 |
| June | 7,803 | + 7 | Dec. | 8,323 | | 1947 | 87,608 | + 7 |
| | | | | | | 1948 | 93,639 | |

### 1948 PURCHASES OF CROSSTIES*

| December '48 Compared to Other Months '48 (000) | | | December '48 Compared to Other Months '48 (000) | | | Twelve Month Totals '48 And Other Years (000) | | |
|---|---|---|---|---|---|---|---|---|
| Month | Amt. | % Change | Month | Amt. | % Change | Year | Amt. | % Change |
| Jan. | $5,623 | +51 | July | $7,611 | +12 | 1942 | $63,153 | +40 |
| Feb. | 4,630 | +84 | Aug. | 9,106 | — 6 | 1943 | 83,402 | + 6 |
| Mar. | 5,861 | +45 | Sept. | 8,999 | — 5 | 1944 | 85,202 | + 3 |
| Apr. | 5,933 | +44 | Oct. | 9,907 | —14 | 1945 | 77,389 | +14 |
| May | 6,129 | +39 | Nov. | 8,756 | — 3 | 1946 | 88,478 | — |
| June | 7,028 | +21 | Dec. | 8,517 | | 1947 | 92,098 | — 4 |
| | | | | | | 1948 | 88,100 | |

### 1948 PURCHASES OF OTHER MATERIALS*

| December '48 Compared to Other Months '48 (000) | | | December '48 Compared to Other Months '48 (000) | | | Twelve Month Totals '48 And Other Years (000) | | |
|---|---|---|---|---|---|---|---|---|
| Month | Amt. | % Change | Month | Amt. | % Change | Year | Amt. | % Change |
| Jan. | $ 92,795 | +15 | July | $ 99,819 | + 7 | 1942 | $714,676 | +70 |
| Feb. | 90,560 | +18 | Aug. | 101,418 | + 5 | 1943 | 723,509 | +68 |
| Mar. | 107,035 | — | Sept. | 101,231 | + 5 | 1944 | 863,732 | +41 |
| Apr. | 104,540 | + 2 | Oct. | 110,145 | — 3 | 1945 | 862,822 | +41 |
| May | 96,069 | +11 | Nov. | 102,149 | + 4 | 1946 | 863,622 | +41 |
| June | 103,275 | + 3 | Dec. | 106,651 | | 1947 | 1,037,873 | +17 |
| | | | | | | 1948 | 1,215,687 | |

### 1948 PURCHASES OF FUEL*

| December '48 Compared to Other Months '48 (000) | | | December '48 Compared to Other Months '48 (000) | | | Twelve Month Totals '48 And Other Years (000) | | |
|---|---|---|---|---|---|---|---|---|
| Month | Amt. | % Change | Month | Amt. | % Change | Year | Amt. | % Change |
| Jan. | $73,733 | — 5 | July | $68,257 | + 3 | 1942 | $426,335 | +94 |
| Feb. | 70,438 | — 1 | Aug. | 70,679 | — 1 | 1943 | 527,296 | +57 |
| Mar. | 69,181 | + 1 | Sept. | 70,086 | — | 1944 | 585,832 | +41 |
| Apr. | 58,478 | +20 | Oct. | 66,048 | + 6 | 1945 | 555,155 | +49 |
| May | 73,232 | — 4 | Nov. | 63,843 | +10 | 1946 | 553,153 | +50 |
| June | 74,586 | — 6 | Dec. | 70,069 | | 1947 | 691,630 | +20 |
| | | | | | | 1948 | 828,630 | |

### 1948 TOTAL PURCHASES* (Excl. Equip.)

| December '48 Compared to Other Months '48 (000) | | | December '48 Compared to Other Months '48 (000) | | | Twelve Month Totals '48 And Other Years (000) | | |
|---|---|---|---|---|---|---|---|---|
| Month | Amt. | % Change | Month | Amt. | % Change | Year | Amt. | % Change |
| Jan. | $179,560 | + 8 | July | $182,699 | + 6 | 1942 | $1,259,811 | +76 |
| Feb. | 173,828 | +11 | Aug. | 190,252 | + 2 | 1943 | 1,394,281 | +60 |
| Mar. | 190,738 | + 1 | Sept. | 189,531 | + 2 | 1944 | 1,610,529 | +38 |
| Apr. | 174,382 | +11 | Oct. | 194,259 | — | 1945 | 1,572,404 | +42 |
| May | 182,146 | + 6 | Nov. | 182,409 | + 6 | 1946 | 1,570,555 | +42 |
| June | 192,692 | — | Dec. | 193,560 | | 1947 | 1,909,209 | +17 |
| | | | | | | 1948 | 2,226,056 | |

*November and December, 1948, figures are preliminary and 1948 totals are subject to revision.

### 1948 INVENTORIES OF RAIL**

Oct. 1, '48 Compared to Other Months '48 (000)

| Month | Amt. | % Change | Month | Amt. | % Change |
|---|---|---|---|---|---|
| Jan. | $32,924 | + 1 | June | $30,767 | + 8 |
| Feb. | 36,120 | — 8 | July | 30,837 | + 8 |
| Mar. | 37,341 | —11 | Aug. | 30,005 | +11 |
| Apr. | 36,572 | — 9 | Sept. | 32,212 | + 3 |
| May | 31,911 | + 4 | Oct. | 33,163 | |

Oct. '48 Compared to Other Octs. (000)

| Year | Amt. | % Change |
|---|---|---|
| 1942 | $20,484 | +62 |
| 1943 | 19,764 | +68 |
| 1944 | 22,253 | +49 |
| 1945 | 25,158 | +32 |
| 1946 | 25,783 | +29 |
| 1947 | 28,084 | +18 |
| 1948 | 33,163 | |

### 1948 INVENTORIES OF CROSSTIES**

Oct. 1, '48 Compared to Other Months '48 (000)

| Month | Amt. | % Change | Month | Amt. | % Change |
|---|---|---|---|---|---|
| Jan. | $92,300 | —14 | June | $86,548 | — 9 |
| Feb. | 93,492 | —15 | July | 82,143 | — 4 |
| Mar. | 98,843 | —20 | Aug. | 77,952 | + 2 |
| Apr. | 96,782 | —18 | Sept. | 78,309 | + 1 |
| May | 92,711 | —15 | Oct. | 79,148 | |

Oct. '48 Compared to Other Octs. (000)

| Year | Amt. | % Change |
|---|---|---|
| 1942 | $54,562 | +45 |
| 1943 | 61,665 | +28 |
| 1944 | 70,322 | +13 |
| 1945 | 63,300 | +25 |
| 1946 | 75,701 | + 5 |
| 1947 | 87,829 | —10 |
| 1948 | 79,148 | |

### 1948 INVENTORIES OF OTHER MATERIALS**

Oct. 1, '48 Compared to Other Months '48 (000)

| Month | Amt. | % Change | Month | Amt. | % Change |
|---|---|---|---|---|---|
| Jan. | $560,703 | + 9 | June | $607,278 | + 1 |
| Feb. | 570,201 | + 7 | July | 610,025 | — |
| Mar. | 577,078 | + 6 | Aug. | 614,271 | — 1 |
| Apr. | 587,390 | + 4 | Sept. | 611,861 | — |
| May | 603,972 | + 1 | Oct. | 611,887 | |

Oct. '48 Compared to Other Octs. (000)

| Year | Amt. | % Change |
|---|---|---|
| 1942 | $386,346 | +58 |
| 1943 | 378,022 | +62 |
| 1944 | 430,811 | +42 |
| 1945 | 450,008 | +36 |
| 1946 | 472,764 | +29 |
| 1947 | 558,987 | + 9 |
| 1948 | 611,887 | |

### 1948 INVENTORIES OF SCRAP**

Oct. 1, '48 Compared to Other Months '48 (000)

| Month | Amt. | % Change | Month | Amt. | % Change |
|---|---|---|---|---|---|
| Jan. | $13,225 | + 9 | June | $13,993 | + 3 |
| Feb. | 13,336 | + 8 | July | 14,210 | + 1 |
| Mar. | 16,409 | —12 | Aug. | 14,857 | — 3 |
| Apr. | 15,783 | — 9 | Sept. | 15,927 | —10 |
| May | 16,217 | —11 | Oct. | 14,378 | |

Oct. '48 Compared to Other Octs. (000)

| Year | Amt. | % Change |
|---|---|---|
| 1942 | $9,544 | +51 |
| 1943 | 8,170 | +75 |
| 1944 | 11,488 | +25 |
| 1945 | 10,183 | +41 |
| 1946 | 11,424 | +26 |
| 1947 | 10,426 | +38 |
| 1948 | 14,378 | |

### 1948 INVENTORIES OF FUEL**

Oct. 1, '48 Compared to Other Months '48 (000)

| Month | Amt. | % Change | Month | Amt. | % Change |
|---|---|---|---|---|---|
| Jan. | $66,388 | +44 | June | $72,512 | +32 |
| Feb. | 66,727 | +44 | July | 83,946 | +14 |
| Mar. | 65,071 | +47 | Aug. | 86,636 | +11 |
| Apr. | 64,153 | +49 | Sept. | 91,850 | + 4 |
| May | 62,094 | +54 | Oct. | 95,874 | |

Oct. '48 Compared to Other Octs. (000)

| Year | Amt. | % Change |
|---|---|---|
| 1942 | $51,624 | +86 |
| 1943 | 61,925 | +55 |
| 1944 | 67,357 | +42 |
| 1945 | 57,279 | +67 |
| 1946 | 54,797 | +75 |
| 1947 | 56,629 | +69 |
| 1948 | 95,874 | |

### 1948 TOTAL INVENTORIES**

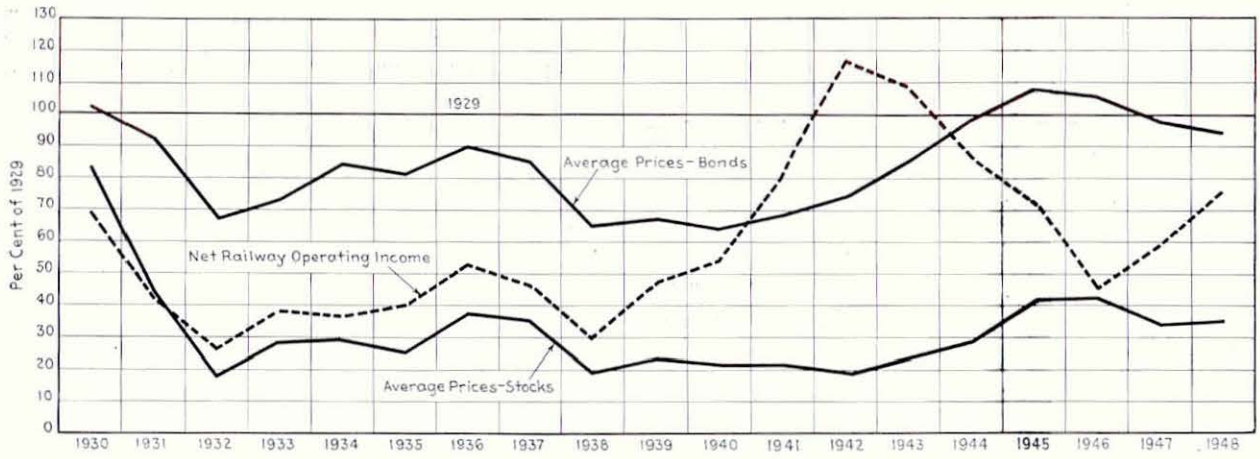
Oct. 1, '48 Compared to Other Months '48 (000)

| Month | Amt. | % Change | Month | Amt. | % Change |
|---|---|---|---|---|---|
| Jan. | $765,540 | + 9 | June | $811,098 | + 3 |
| Feb. | 779,876 | + 7 | July | 821,161 | + 2 |
| Mar. | 794,742 | + 5 | Aug. | 823,721 | + 1 |
| Apr. | 800,680 | + 4 | Sept. | 830,159 | + 1 |
| May | 806,905 | + 3 | Oct. | 834,450 | |

Oct. '48 Compared to Other Octs. (000)

| Year | Amt. | % Change |
|---|---|---|
| 1942 | $522,560 | +60 |
| 1943 | 529,546 | +58 |
| 1944 | 602,231 | +39 |
| 1945 | 605,928 | +38 |
| 1946 | 640,469 | +30 |
| 1947 | 741,955 | +12 |
| 1948 | 834,450 | |

** October, 1948, figures subject to revision.




*Railway Age's* indexes of average prices of 20 representative railroad stocks and 20 bonds

# 1948 FINANCIALLY UNEVENTFUL

***Year marked by increased dividend disbursements, reorganization progress, and decline in net capitalization accompanied by continued increase in property values***

By GARDNER C. HUDSON
News Editor

Substantial increases in total railroad dividend disbursements; a further decrease in the number of companies and the total mileage in receivership; initiation by several roads of proceedings for voluntary adjustment of their capital structure under the provisions of the so-called Mahaffie Act; and an additional increase in property investment accompanied by a decline in net capitalization—these were the outstanding developments of 1948 in the realm of railroad finance.

These developments, singly and in combination, constitute an overall picture that is both satisfactory and encouraging, so far, at least, as financial actions within the control of the railroads themselves are concerned. But the reverse of the picture is not so bright—for 1948 was also another year of rising costs; of further demands from employees for wage increases and additional "featherbed" working rules; of shipper and passenger opposition to rate and fare increases; of continued inroads on rail traffic by subsidized competitors—factors largely beyond the control of the railroads themselves but which, if indefinitely continued, can only make the financial picture in future years far less bright than it was in 1948.

Those factors, moreover, continued to exercise a controlling influence on public acceptance of railroad securities—of railroad stocks in particular—for the average price of those stocks did not increase commensurately with the increase in the equity behind them or the higher returns on many individual issues.

Tables appearing in this article were prepared by Edith Stone and Ann Ortlinghaus of the *Railway Age* staff.

## Dividend Payments Increase

As shown by the list at the end of this article, 1948 was a year of many changes in railroad dividends; with but few exceptions those changes represented increases as compared with other recent years.

The dividend increases took varying forms. Some roads, such as the Reading, the Southern and the Southern Pacific, increased the quarterly payments on their common stocks, not only disbursing more money to shareholders in 1948 but stating, or at least indicating, that the higher level of payments would be continued into 1949. Other roads—the Atchison, Topeka & Santa Fe, Norfolk & Western and Wheeling & Lake Erie among them—on one or more occasions during the year declared extra dividends over and above their regular payments.

Still other companies, like the New York Central, the Chicago & Eastern Illinois and Nashville, Chattanooga & St. Louis, which had paid dividends in 1945 or 1946 but omitted them in 1947, resumed payments on some basis in 1948. Initial dividends were paid by a number of roads, such as the Gulf, Mobile & Ohio and Seaboard Air Line, while others, like the New York, Chicago & St. Louis and Denver & Rio Grande Western either reduced or cleared up entirely dividends in arrears on preferred stock.

Several roads made payments in 1948 on one or more classes of stock on which no dividends had been paid since the early 1930's; the Baltimore & Ohio, the Delaware, Lackawanna & Western, the Illinois Central, the Kansas City Southern and the Pittsburgh & West Virginia all took action of that nature.

The percentage of dividend-paying railroad stock is still far less than was the case 20 years ago, when

dividends were being paid on approximately 75 per cent of all issued railroad stock. The 1948 payments on many issues likewise were doubtless below what the owners would consider satisfactory. Nevertheless, the railroads' 1948 dividend payment record is a clear indication of their willingness to make some distribution of profits to stockholders when money for such distribution is available. That record should be adequate notice to present or prospective investors that future dividends on railroad stocks depend not so much on the railroads themselves as on public policies which will permit the roads to obtain a fair share of available traffic at reasonable rates, and to move that traffic without the burden of excessive costs.

Two major systems—the Chicago, Rock Island & Pacific and the Central of Georgia, with a combined total of nearly 9,500 miles of line—emerged from receivership during the year. Only the Wyoming, with 29 miles of line, was placed in receivership.

### Receiverships and Reorganizations

Thus, both the number of companies and the total mileage in receivership or trusteeship at the end of the year showed a continuation of the downward trend which has now lasted without interruption since 1938 as to the number of companies, and 1939 as to total mileage. Mileage in the hands of receivers as of De-

## Representative Equipment Trust Issues Sold in 1948

| Road | Maturity | Amount | Int. Rate % | Sold to Banker: Price | Sold to Banker: Cost | Purchaser |
|---|---|---|---|---|---|---|
| Atlantic Coast Line—Louisville & Nashville | 1949–1963 | $1,320,000 | 2⅜ | 99.217 | 2.49 | R. W. Pressprich & Co. and Freeman & Co. |
| Baltimore & Ohio, Ser. X | 1949–1958 | 4,000,000 | 2½ | 99.723 | 2.56 | Salomon Bros. & Hutzler, et al. |
| Ser. Y | 1949–1958 | 4,500,000 | 2⅜ | 99.22 | 2.54 | Harris, Hall & Co., Inc., et al. |
| Ser. Z | 1949–1958 | 5,060,000 | 2¼ | 99.257 | 2.40 | Salomon Bros. & Hutzler, et al. |
| Bangor & Aroostook, Ser. M | 1949–1958 | 700,000 | 2⅛ | 98.612 | 2.41 | R. W. Pressprich & Co. |
| Ser. N | 1949–1963 | 2,100,000 | 2½ | 98.3199 | 2.77 | Halsey, Stuart & Co., Inc. |
| Central of New Jersey, Ser. A | 1949–1963 | 1,500,000 | 2⅝ | 99.5379 | 2.70 | Harris, Hall & Co., Inc., et al. |
| Central of Pennsylvania, Ser. A | 1949–1963 | 1,395,000 | 2⅝ | 99.189 | 2.75 | Halsey, Stuart & Co., Inc. |
| Chesapeake & Ohio | 1949–1958 | 4,900,000 | 2 | 99.108 | 2.18 | Salomon Bros. & Hutzler, et al. |
| | 1949–1958 | 4,750,000 | 2 | 99.4299 | 2.11 | Harris, Hall & Co., Inc., et al. |
| | 1949–1958 | 5,500,000 | 2⅛ | 99.556 | 2.21 | Harris, Hall & Co., Inc., et al. |
| | 1949–1958 | 4,450,000 | 2¼ | 99.297 | 2.40 | Harris, Hall & Co., Inc., et al. |
| | 1949–1958 | 3,500,000 | 2⅜ | 99.5101 | 2.47 | Halsey, Stuart & Co., Inc., et al. |
| | 1949–1958 | 3,600,000 | 2⅝ | 99.4 | 2.74 | Halsey, Stuart & Co., Inc., et al. |
| | 1949–1958 | 5,500,000 | 2⅝ | 99.4 | 2.74 | Halsey, Stuart & Co., Inc., et al. |
| | 1949–1958 | 4,200,000 | 2¼ | 99.52 | 2.35 | Salomon Bros. & Hutzler, et al. |
| Chicago & Eastern Illinois, Ser. F | 1949–1963 | 2,460,000 | 2⅝ | 99.33 | 2.73 | Salomon Bros. & Hutzler, et al. |
| Chicago & North Western | 1949–1963 | 5,340,000 | 2⅝ | 99.409 | 2.46 | Harris, Hall & Co., Inc., et al. |
| | 1949–1963 | 5,325,000 | 2⅝ | 99.439 | 2.46 | Kidder, Peabody & Co., et al. |
| Chicago, Burlington & Quincy | 1948–1963 | 7,230,000 | 2¼ | 99.29 | 2.36 | First Boston Corp., et al. |
| Chicago, Indianapolis & Louisville | 1949–1963 | 1,800,000 | 2⅝ | 98.16 | 2.91 | Salomon Bros. & Hutzler, et al. |
| Chicago, Mil., St. P. & Pac., Ser. BB | 1948–1958 | 2,640,000 | 2⅛ | 99.524 | 2.22 | Harris, Hall & Co., Inc., et al. |
| Ser. CC | 1948–1958 | 5,040,000 | 2¼ | 99.701 | 2.31 | Salomon Bros. & Hutzler, et al. |
| Ser. DD | 1948–1958 | 7,120,000 | 2 | 99.2265 | 2.15 | Halsey, Stuart & Co., Inc., et al. |
| Ser. EE | 1949–1958 | 3,820,000 | 2 | 99.0267 | 2.19 | Harris, Hall & Co., Inc., et al. |
| Ser. FF | 1949–1958 | 6,600,000 | 2¼ | 99.4317 | 2.37 | Harriman Ripley & Co., Inc. and Lehman Bros. |
| Chicago, Rock Is. & Pac., Ser. A | 1949–1963 | 4,590,000 | 2¼ | 99.4103 | 2.34 | Halsey, Stuart & Co., Inc. |
| Ser. B | 1949–1958 | 3,420,000 | 2¼ | 99.253 | 2.41 | Salomon Bros. & Hutzler |
| Chicago, St. P., Minn. & Omaha | 1949–1963 | 2,100,000 | 2⅝ | 99.46 | 2.71 | Salomon Bros. & Hutzler, et al. |
| Delaware, Lack. & Western, Ser. G | 1948–1958 | 1,600,000 | 2¾ | 99.6647 | 2.81 | Halsey, Stuart & Co., Inc., et al. |
| Denver & Rio Grande Western, Ser. M | 1948–1963 | 4,530,000 | 2½ | 99.4099 | 2.59 | Harriman Ripley & Co., Inc. and Lehman Bros. |
| Erie | 1949–1958 | 4,850,000 | 2¼ | 99.21 | 2.41 | First Boston Corporation, et al. |
| Great Northern | 1949–1963 | 12,720,000 | 2⅝ | 99.608 | 2.44 | Halsey, Stuart & Co., Inc., et al. |
| Illinois Central, Ser. X | 1948–1957 | 3,200,000 | 2½ | 99.3537 | 2.65 | Gregory & Son, Inc. |
| Ser. Y | 1948–1957 | 4,997,000 | 2¼ | 99.4599 | 2.37 | Halsey, Stuart & Co., Inc., et al. |
| Ser. Y | 1949–1957 | 3,240,000 | 2½ | 99.092 | 2.34 | Harriman Ripley & Co., Inc. and Lehman Bros. |
| Ser. Z | 1948–1958 | 14,000,000 | 2½ | 99.405 | 2.63 | Halsey, Stuart & Co., Inc., et al. |
| Ser. AA | 1949–1958 | 5,500,000 | 2¼ | 99.272 | 2.41 | Halsey, Stuart & Co., Inc., et al. |
| Illinois Terminal, Ser. D | 1949–1958 | 1,000,000 | 2½ | 99.85 | 2.53 | Mercantile-Commerce Bank & Trust Co., et al. |
| International-Great Northern, Ser. AA | 1949–1958 | 1,640,000 | 2⅝ | 99.162 | 2.80 | Halsey, Stuart & Co., Inc. |
| Long Island, Ser. K | 1949–1963 | 4,035,000 | 2⅝ | 99.2699 | 2.74 | Harriman Ripley & Co., Inc. and Lehman Bros. |
| Louisiana & Arkansas, Ser. C | 1949–1958 | 1,760,000 | 2⅝ | 100.15 | 2.59 | Halsey, Stuart & Co., Inc. |
| Missouri-Kansas-Texas | 1948–1963 | 1,620,000 | 2½ | 98.937 | 2.67 | Freeman & Co., et al. |
| Missouri Pacific, Ser. JJ | 1949–1958 | 4,330,000 | 2¼ | 99.181 | 2.42 | Halsey, Stuart & Co., Inc., et al. |
| Ser. KK | 1949–1958 | 4,700,000 | 2⅝ | 99.126 | 2.56 | Halsey, Stuart & Co., Inc., et al. |
| New York Central | 1949–1958 | 12,600,000 | 2⅜ | 99.429 | 2.49 | Harriman Ripley & Co., Inc. and Lehman Bros. |
| | 1949–1958 | 13,800,000 | 2½ | 99.261 | 2.65 | Harriman Ripley & Co., Inc., and Lehman Bros. |
| New York, Chicago & St. Louis | 1949–1958 | 1,400,000 | 2⅛ | 99.256 | 2.27 | Halsey, Stuart & Co., Inc. |
| | 1949–1963 | 4,050,000 | 2½ | 98.32 | 2.76 | Halsey, Stuart & Co., Inc., et al. |
| | 1949–1958 | 4,600,000 | 2¼ | 99.354 | 2.39 | Salomon Bros. & Hutzler, et al. |
| New York, New Haven & Hartford | 1949–1963 | 6,480,000 | 2⅝ | 98.58466 | 2.84 | Halsey, Stuart & Co., Inc., et al. |
| | 1949–1963 | 4,050,000 | 2½ | 98.32 | 2.76 | Halsey, Stuart & Co., Inc., et al. |
| Pennsylvania, Ser. S | 1948–1962 | 10,890,000 | 2⅜ | 99.329 | 2.48 | Salomon Bros. & Hutzler, et al. |
| Ser. S | 1948–1962 | 10,995,000 | 2⅜ | 99.609 | 2.43 | Halsey, Stuart & Co., Inc., et al. |
| Ser. T | 1949–1963 | 9,600,000 | 2½ | 99.3899 | 2.59 | Halsey, Stuart & Co., Inc., et al. |
| Ser. T | 1949–1963 | 9,900,000 | 2½ | 99.145 | 2.63 | Harriman Ripley & Co., Inc., and Lehman Bros. |
| Ser. U | 1949–1963 | 9,675,000 | 2½ | 99.53 | 2.57 | Salomon Bros. & Hutzler, et al. |
| Ser. V | 1949–1963 | 7,935,000 | 2½ | 99.0399 | 2.65 | Halsey, Stuart & Co., Inc., et al. |
| Reading, Ser. O | 1948–1958 | 4,800,000 | 2 | 99.19 | 2.17 | Kidder, Peabody & Co. and Dick & Merle-Smith |
| Ser. P | 1949–1958 | 3,440,000 | 2¼ | 99.42 | 2.37 | Salomon Bros. & Hutzler, et al. |
| Richmond, Fredericksburg & Potomac | 1948–1958 | 2,400,000 | 2¼ | 100.319 | 2.18 | Halsey, Stuart & Co., Inc. |
| St. Louis, Brownsville & Mex., Ser. AA | 1949–1958 | 1,580,000 | 2⅝ | 99.162 | 2.80 | Halsey, Stuart & Co., Inc. |
| St. Louis-San Francisco, Ser. A | 1949–1963 | 8,280,000 | 2¾ | 99.385 | 2.82 | Halsey, Stuart & Co., Inc., et al. |
| Ser. B | 1949–1963 | 5,550,000 | 2⅝ | 99.22 | 2.74 | Salomon Bros. & Hutzler, et al. |
| Ser. C | 1949–1963 | 4,260,000 | 2½ | 99.2655 | 2.61 | Harris, Hall & Co., Inc., et al. |
| Seaboard Air Line, Ser. D | 1949–1963 | 4,200,000 | 2⅝ | 99.55 | 2.69 | Salomon Bros. & Hutzler, et al. |
| Southern, Ser. NN | 1948–1958 | 10,680,000 | 2⅛ | 99.20699 | 2.28 | Harriman Ripley & Co., Inc., and Lehman Bros. |
| Ser. OO | 1949–1958 | 8,700,000 | 2¼ | 99.405 | 2.38 | Halsey, Stuart & Co., Inc., et al. |
| Southern Pacific, Ser. X | 1949–1958 | 11,100,000 | 2⅛ | 99.191 | 2.29 | Salomon Bros. & Hutzler, et al. |
| Ser. Y | 1949–1958 | 11,050,000 | 2¼ | 99.433 | 2.37 | First Boston Corp., et al. |
| Tennessee Central, Ser. E | 1949–1958 | 314,000 | 3 | 100.00 | ... | Reconstruction Finance Corp. |
| Western Maryland, Ser. M | 1949–1958 | 5,800,000 | 2¼ | 99.169 | 2.42 | Halsey, Stuart & Co., Inc. |
| Wheeling & Lake Erie, Ser. P | 1949–1958 | 3,200,000 | 2 | 99.14 | 2.17 | Harris, Hall & Co., Inc., et al. |
| Ser. Q | 1949–1958 | 1,600,000 | 2⅛ | 99.3819 | 2.25 | Halsey, Stuart & Co., Inc. |

cember 31 was lower than on the corresponding date in any previous year since 1931, while the number of companies so situated was less than in any year since 1930.

In April Congress enacted, and President Truman subsequently signed, the so-called Mahaffie Act, which, by adding a new section 20b to the Interstate Commerce Act, set up procedures for voluntary reorganization of railroad financial structures, both as to bonds and stocks. The definite need for some such legislation is clearly indicated by the fact that at the end of 1948 the Interstate Commerce Commission had before it at least seven applications under the act, including those from such roads as the Central of New Jersey, Lehigh Valley and Maine Central.

The time intervening between the effective date of the act and the end of the year was obviously too short to permit much action by the commission on any of the applications. The commission's Division 4, late in December, however, did approve a proposal by the Macon, Dublin & Savannah, a Seaboard Air Line subsidiary, to extend from January 1, 1947, to January 1, 1972, the maturity date of $1,733,000 of first mortgage 5 per cent bonds, and to modify in other respects the mortgage pursuant to which the bonds were issued.

Not all the Mahaffie Act applications deal with bonds. The Maine Central, for example, has requested authority to change its 30,000 shares of 5 per cent $100 par value preferred stock to 4 per cent shares, with the par value of $185 each, to eliminate accrued dividends aggregating $85 per share.

## Capitalization and Property Investment

In addition to other developments, 1948 also produced a further increase in total railroad property investment and a further decrease in net railway capitalization, continuing in both instances what has now been definitely established as a long-term trend.

At the beginning of 1948, in fact, investment in road and equipment, plus cash, materials and supplies, for all Class I, II and III line-haul railways amounted to the all-time high of $29,436,288,000. This was, in round figures, nearly $600 million dollars above the total investment at the beginning of 1947. A little over one-sixth of the increase was in inventories of materials and supplies, and doubtless reflects in part the general rise in price levels which continued throughout 1947; a little less than one-sixth of the increase was in cash, reflecting the fact that, as wages and prices increase, the railroads, like all other businesses, need additional working capital to carry on their daily routine. But the bulk of the increase—slightly over two-thirds of it—was in actual investment in road and equipment, representing an over-all increase in the value of the railroads' physical facilities.

That increase was a continuation of a trend which has existed without interruption since 1938; and, with only one interruption in the early Thirties, since 1911. The total value of railroad property today is just a little short of twice the reported 1911 value of approximately $15 billion.

Railroad capitalization, on the other hand, has moved in the opposite direction. At the beginning of 1948, it stood at $15,300,775,000, of which $7,001,-

### New Issues of Railroad Securities Offered for Sale in the United States, 1934-1948†

*(Amounts in thousands of dollars)*

| Year | Bonds | Stock | Railroad total | Total all industries | Railroad as per cent of total |
|---|---|---|---|---|---|
| 1934 | $176,423 | .... | $176,423 | $ 397,240 | 44.4 |
| 1935 | 126,031 | .... | 126,031 | 2,331,630 | 5.4 |
| 1936 | 793,618 | $3,838 | 797,456 | 4,571,670 | 17.4 |
| 1937 | 344,257 | .... | 344,257 | 2,309,524 | 14.9 |
| 1938 | 54,873 | .... | 54,873 | 2,154,664 | 2.5 |
| 1939 | 185,474 | 233 | 185,707 | 2,164,007 | 8.6 |
| 1940 | 323,912 | .... | 323,912 | 2,677,173 | 12.1 |
| 1941 | 366,313 | .... | 366,313 | 2,666,887 | 13.7 |
| 1942 | 47,726 | .... | 47,726 | 1,062,288 | 4.5 |
| 1943 | 161,179 | .... | 161,179 | 1,169,692 | 13.8 |
| 1944 | 609,010 | 350 | 609,360 | 3,201,891 | 19.0 |
| 1945 | 1,453,517 | 504 | 1,454,021 | 6,010,985 | 24.2 |
| 1946 | 711,119 | .... | 711,119 | 6,899,646 | 10.3 |
| 1947 | 285,680 | .... | 285,680 | 6,576,824 | 4.3 |
| 1948* | 501,342 | .... | 501,342 | 5,316,201 | 9.4 |

* 10 months total.
† Compiled by Securities and Exchange Commission.

### Summary of Railroad Receiverships and Trusteeships, 1876 to 1948

| | Roads Placed in Receivership or Trusteeship | | Roads Taken from Receivership or Trusteeship* | | | Roads Placed in Receivership or Trusteeship | | Roads Taken from Receivership or Trusteeship* | |
|---|---|---|---|---|---|---|---|---|---|
| Year | No. of roads | Miles | No. of roads | Miles | Year | No. of roads | Miles | No. of roads | Miles |
| 1876 | 42 | 6,662 | 30 | 3,840 | 1911 | 5 | 2,606 | 13 | 1,386 |
| 1877 | 38 | 3,637 | 54 | 3,875 | 1912 | 13 | 3,784 | 12 | 661 |
| 1878 | 27 | 2,320 | 48 | 3,906 | 1913 | 17 | 9,020 | 6 | 1,159 |
| 1879 | 12 | 1,102 | 65 | 4,909 | 1914 | 22 | 4,222 | 9 | 1,470 |
| 1880 | 13 | 885 | 31 | 3,775 | 1915 | 12 | 20,143 | 11 | 3,914 |
| 1881 | 5 | 110 | 29 | 2,617 | 1916 | 9 | 4,439 | 26 | 8,355 |
| 1882 | 12 | 912 | 16 | 867 | 1917 | 19 | 2,486 | 20 | 10,963 |
| 1883 | 11 | 1,990 | 18 | 1,354 | 1918 | 8 | 3,519 | 11 | 763 |
| 1884 | 37 | 11,038 | 15 | 710 | 1919 | 7 | 244 | 8 | 459 |
| 1885 | 44 | 8,836 | 22 | 3,156 | 1920 | 10 | 541 | 7 | 380 |
| 1886 | 13 | 1,799 | 45 | 7,687 | 1921 | 14 | 1,744 | 11 | 4,173 |
| 1887 | 9 | 1,046 | 31 | 5,478 | 1922 | 12 | 4,330 | 15 | 6,151 |
| 1888 | 22 | 3,270 | 19 | 1,596 | 1923 | 10 | 2,218 | 8 | 637 |
| 1889 | 22 | 3,803 | 25 | 2,930 | 1924 | 11 | 920 | 14 | 3,992 |
| 1890 | 26 | 2,963 | 29 | 3,825 | 1925 | 6 | 11,368 | 6 | 638 |
| 1891 | 26 | 2,159 | 21 | 3,223 | 1926 | 6 | 88 | 12 | 12,852 |
| 1892 | 36 | 10,508 | 28 | 1,922 | 1927 | 6 | 924 | 5 | 142 |
| 1893 | 74 | 29,340 | 25 | 1,613 | 1928 | 1 | 19 | 4 | 209 |
| 1894 | 38 | 7,025 | 42 | 5,643 | 1929 | 3 | 634 | 5 | 562 |
| 1895 | 31 | 4,089 | 52 | 12,831 | 1930 | 4 | 4,752 | 2 | 1,048 |
| 1896 | 34 | 5,441 | 58 | 13,730 | 1931 | 19 | 5,195 | 2 | 102 |
| 1897 | 18 | 1,537 | 42 | 6,675 | 1932 | 13 | 11,817 | 8 | 394 |
| 1898 | 18 | 2,069 | 47 | 6,054 | 1933 | 18 | 21,222 | 2 | 298 |
| 1899 | 10 | 1,019 | 32 | 4,294 | 1934 | 1 | 81 | 2 | 40 |
| 1900 | 16 | 1,165 | 24 | 3,477 | 1935 | 16 | 29,018 | 5 | 436 |
| 1901 | 4 | 73 | 17 | 1,139 | 1936 | 4 | 8 | 3 | 122 |
| 1902 | 5 | 278 | 20 | 693 | 1937 | 23 | 1,937 | 2 | 179 |
| 1903 | 9 | 229 | 13 | 555 | 1938 | 9 | 6,194 | 8 | 290 |
| 1904 | 8 | 744 | 13 | 524 | 1939 | 3 | 733 | 4 | 401 |
| 1905 | 10 | 3,593 | 6 | 679 | 1940 | .. | .... | 6 | 3,675 |
| 1906 | 6 | 204 | 8 | 262 | 1941 | 1 | 25 | 9 | 5,031 |
| 1907 | 7 | 317 | 6 | 114 | 1942 | 4 | 961 | 7 | 2,230 |
| 1908 | 24 | 8,009 | 3 | 138 | 1943 | 3 | 23 | 6 | 394 |
| 1909 | 5 | 859 | 12 | 2,629 | 1944 | 1 | .... | 8 | 13,096 |
| 1910 | 7 | 735 | 17 | 1,100 | 1945 | 1 | 96 | 5 | 10,833 |
| | | | | | 1946 | .. | .... | 7 | 4,832 |
| | | | | | 1947 | 2 | 396 | 14 | 11,535 |
| | | | | | 1948 | 1 | 29 | 11 | 9,473 |

* Prior to 1938 these figures covered foreclosure sales only.

### Railroads Removed from Receivership or Trusteeship During 1948

| Name of Road | Mileage Operated |
|---|---|
| Central of Georgia | 1,815 |
| Chicago, Rock Island & Pacific | 7,650 |
| Chicago, Rock Island & Gulf | .... |
| Choctaw, Oklahoma & Gulf | .... |
| Peoria Terminal | .... |
| Rock Island, Arkansas & Louisiana | .... |
| Rock Island, Memphis Terminal | .... |
| Rock Island, Omaha Terminal | .... |
| Rock Island, Stuttgart & Southern | .... |
| St. Paul & Kansas City Short Line | .... |
| Yreka Western | 8 |
| Total | 9,473 |

### Mileage in the Hands of Receivers or Trustees

(Figures to 1947, inclusive, from I. C. C. Statistics for Year Ended December 31, 1947. Figures for 1948 Compiled by *Railway Age*)

| Year ended | Miles of road operated by receivers or trustees at close of year | Net change during year in miles of road operated | No. of roads in charge of receivers or trustees at close of year |
|---|---|---|---|
| June 30, 1894 | 40,819 | | 192 |
| 1895 | 37,856 | — 2,963 | 169 |
| 1896 | 30,475 | — 7,380 | 151 |
| 1897 | 18,862 | —11,614 | 128 |
| 1898 | 12,745 | — 6,117 | 94 |
| 1899 | 9,853 | — 2,892 | 71 |
| 1900 | 4,178 | — 5,675 | 52 |
| 1901 | 2,497 | — 1,681 | 45 |
| 1902 | 1,475 | — 1,022 | 27 |
| 1903 | 1,185 | — 290 | 27 |
| 1904 | 1,323 | + 138 | 28 |
| 1905 | 796 | — 527 | 26 |
| 1906 | 3,971 | + 3,176 | 34 |
| 1907 | 3,926 | — 45 | 29 |
| 1908 | 9,529 | + 5,603 | 52 |
| 1909 | 10,530 | + 1,001 | 44 |
| 1910 | 5,257 | — 5,273 | 39 |
| 1911 | 4,593 | — 664 | 39 |
| 1912 | 9,786 | + 5,193 | 44 |
| 1913 | 16,286 | + 6,500 | 49 |
| 1914 | 18,608 | + 2,322 | 68 |
| 1915 | 30,223 | +11,615 | 85 |
| 1916 | 37,353 | + 7,130 | 94 |
| Dec. 31, 1916 | 34,804 | — 2,550* | 80 |
| 1917 | 17,376 | —17,428 | 82 |
| 1918 | 19,208 | + 1,832 | 74 |
| 1919 | 16,590 | — 2,618 | 65 |
| 1920 | 16,290 | — 300 | 61 |
| 1921 | 13,512 | — 2,778 | 68 |
| 1922 | 15,259 | + 1,747 | 64 |
| 1923 | 12,623 | — 2,636 | 64 |
| 1924 | 8,105 | — 4,518 | 61 |
| 1925 | 18,687 | +10,582 | 53 |
| 1926 | 17,632 | — 1,055 | 45 |
| 1927 | 16,752 | — 880 | 40 |
| 1928 | 5,256 | —11,496 | 33 |
| 1929 | 5,703 | + 447 | 29 |
| 1930 | 9,486 | + 3,783 | 30 |
| 1931 | 12,970 | + 3,484 | 45 |
| 1932 | 22,545 | + 9,575 | 55 |
| 1933 | 41,698 | +19,153 | 78 |
| 1934 | 42,168 | + 470 | 80 |
| 1935 | 68,345 | +26,177 | 87 |
| 1936 | 69,712 | + 1,367 | 91 |
| 1937 | 70,884 | + 1,172 | 109 |
| 1938 | 76,938 | + 6,054 | 109 |
| 1939 | 77,013 | + 75 | 108 |
| 1940 | 75,270 | — 1,743 | 103 |
| 1941 | 69,859 | — 5,411 | 91 |
| 1942 | 66,904 | — 2,955 | 87 |
| 1943 | 64,758 | — 2,146 | 82 |
| 1944 | 50,497 | —14,261 | 76 |
| 1945 | 39,714 | —10,783 | 72 |
| 1946 | 34,389 | — 5,325 | 65 |
| 1947 | 22,750 | —11,639 | 52 |
| 1948 | 14,369 | — 8,381 | 44 |

* Represents decrease for six months.

### Capitalization and Investment

All line-haul railways (Thousand dollars)

| | Net capitalization in hands of public | Total property investment |
|---|---|---|
| 1927 | $18,136,691 | $25,508,956 |
| 1928 | 18,510,583 | 25,885,717 |
| 1929 | 18,679,707 | 26,492,266 |
| 1930 | 19,065,626 | 26,955,633 |
| 1931 | 18,941,460 | 26,825,723 |
| 1932 | 18,893,459 | 26,736,597 |
| 1933 | 18,830,912 | 26,523,279 |
| 1934 | 18,652,491 | 26,330,441 |
| 1935 | 18,342,297 | 26,213,132 |
| 1936 | 18,335,887 | 26,298,254 |
| 1937 | 18,319,003 | 26,451,665 |
| 1938 | 17,987,983 | 26,389,394 |
| 1939 | 17,698,158 | 26,423,592 |
| 1940 | 17,629,613 | 26,641,144 |
| 1941 | 17,568,203 | 26,940,418 |
| 1942 | 17,314,559 | 27,309,369 |
| 1943 | 16,754,982 | 27,957,307 |
| 1944 | 16,275,889 | 28,213,434 |
| 1945 | 15,666,926 | 28,580,775 |
| 1946 | 15,508,976 | 28,839,495 |
| 1947 | 15,300,775 | 29,436,288 |

804,000 was represented by stocks and $8,298,971,000 by bonds or other forms of funded debt.

The total of outstanding stocks has shown little change over the 30 years since the end of the first world war. At the end of 1918 it stood at $6,732 million; at the end of 1929 it reached a high point of $7,213 million. The present figure is roughly half-way between.

The debt total, on the other hand, is lower than in any year since 1911, when it was $9,164 million; and substantially lower than at its peak of $11,880 million at the end of 1930. With only one or two negligible exceptions, the outstanding funded debt has, in fact, been reduced in every year since 1930.

Consequently, capitalization as a whole has declined in every year since 1930, when it reached its high point of $19,066 million. At the beginning of 1948 it was actually less than $300 million larger than in 1911, when it totaled $15,009 million.

In the 37 years between 1911 and 1948, in short, railroad capitalization increased by less than two per cent, while railroad property investment increased by nearly 100 per cent.

## *Railroad Stocks Worth More*

The reason, quite obviously, is the policy which the railroads have followed consistently, at least since the end of government operation in 1919—of making physical improvements to a very considerable extent out of whatever earnings they have been able to show after operating expenses, taxes and other charges were paid.

The result has been to produce a marked increase in the value of physical property behind each share of railroad stock.

In 1911, for example, capitalization was almost exactly equal to property investment. There was, in other words, just about one dollar of property behind every dollar of outstanding stock. In 1948, by contrast, capitalization is only a little more than *half* of property investment; even after the value of bonds is deducted, there is still about three dollars of property behind every dollar of stock outstanding. Even in 1929, the ratio of property investment to outstanding stock was only about two to one, as against today's three-to-one ratio.

The equity behind each par value dollar of railroad stock is, therefore, approximately half again as high today as in the prosperous period of 1929.

Yet the average price of 20 leading railroad stocks in 1948, as shown by *Railway Age's* own index, was only $48.77 per share—just a little over one-third the average 1929 price of $138 per share. To some extent, of course, this is a reflection of the fact that security prices in general are substantially below 1929 levels. But the discrepancy between average prices for the

## Representative Equipment Note Issues in 1948

| Road | Amount | Max. Term Years | % of Equipment Cost Covered | Interest Cost % | Sold to |
|---|---|---|---|---|---|
| Chicago, Rock Island & Pacific | $1,239,360 | 10 | 75 | 2.39 | Mercantile-Commerce Bank & Trust Co., St. Louis, Mo. |
| Gulf, Mobile & Ohio | 7,000,000 | 20 | 84 | 3.75 | Halsey, Stuart & Co., et al. |
| Hillsboro & North Eastern | 15,000 | 10 | .. | 4 | Marine National Exchange Bank, Milwaukee, Wis. |
| Hoosac Tunnel & Wilmington | 27,500 | 15(a) | .. | 6 | S. M. Pinsly, president and principal stockholder |

(a) Fifteen-yr. extension of note which expired in 1948.

## Railroads in the Hands of Receivers or Trustees on December 31, 1948

| Road | Mileage operated | Mileage owned | Date of receivership or trusteeship | Long term debt in hands of public | Capital stock in hands of public | Total securities in hands of public | Receiver's or trustee's certificates in hands of public | Principal amount of obligations in default as to principal and/or interest |
|---|---|---|---|---|---|---|---|---|
| Boston & Providence | ....(a) | 61 | Aug. 5, 1938 | $2,170,000 | $3,329,100 | $5,499,100 | None | $2,170,000 |
| Central of New Jersey | 417 | 371 | Oct. 31, 1939 | 50,318,919 | 11,652,800 | 61,971,719 | None | 48,731,000 |
| Duluth, South Shore & Atlantic | 530 | 426 | Jan. 2, 1937 | 3,816,000 | 10,800,000 | 14,616,000 | None | 3,816,000 |
| Mineral Range | 24 | 24 | June 1, 1937 | 2,800 | 705,800 | 708,600 | None | 2,800 |
| Florida East Coast | 575 | 569 | Sept. 1, 1931(b) | 56,465,025 | 37,500,000 | 93,965,025 | None | 45,000,000 |
| Georgia & Florida | 408 | 363 | Oct. 19, 1929 | 8,253,919 | 13,382,441 | 21,991,081 | 600,000 | 8,253,919 |
| Georgia, Florida & Alabama | ....(c) | 132 | Nov. 7, 1931 (d) | 125,000 | 1,500,000 | 1,625,000 | None | 125,000 |
| Meridian & Bigbee River | 50 | 50 | June 15, 1933 | 500,000 | 300,000 | 812,725 | 1,188,655 | 500,000 |
| Missouri & Arkansas | ....(e) | 335 | Feb. 14, 1947 | None | None | None | None | None |
| Missouri Pacific | 7,012 | 6,498 | Apr. 1, 1933 | 360,462,999 | 154,639,600 | 515,102,599 | None | 333,679,500 |
| Boonville, St. Louis & Southern | .... | 0.18 | June 1, 1936 | 7,000 | None | 7,000 | None | 7,000 |
| Cairo & Thebes | .... | 25 | Dec. 1, 1937 | 1,699,000 | None | 1,699,000 | None | 1,699,000 |
| Chester & Mount Vernon | .... | 64 | Dec. 1, 1937 | None | None | None | None | None |
| Fort Smith Suburban | .... | 7 | Dec. 1, 1937 | None | None | None | None | None |
| Marion & Eastern | .... | 3 | Dec. 1, 1937 | None | None | None | None | None |
| Missouri Pacific RR Corp. in Nebr. | .... | .... | May 1, 1933 | None | None | None | None | None |
| Natchez & Southern | 9 | 8 | Dec. 1, 1937 | None | None | None | None | None |
| New Orleans, Texas & Mexico | 196 | 174 | April 1, 1933 | 40,615,900 | 859,800 | 41,475,700 | None | None |
| Asherton & Gulf | 32 | 32 | Dec. 1, 1937 | None | None | None | None | None |
| Asphalt Belt | 18 | 18 | Dec. 1, 1937 | None | None | None | None | None |
| Beaumont, Sour Lake & Western | 146 | 84 | May 1, 1933 | None | None | None | None | None |
| Houston North Shore | .... | 27 | May 1, 1933 | None | None | None | None | None |
| Houston & Brazos Valley | 37 | 37 | Dec. 1, 1937 | None | None | None | None | None |
| International-Great Northern | 1,110 | 1,056 | Apr. 1, 1933 | 49,362,129 | None | 49,362,129 | None | 44,927,700 |
| Austin Dam & Suburban | .... | 2(f) | Dec. 1, 1937 | None | None | None | None | None |
| New Iberia & Northern | 104 | 61 | Dec. 1, 1937 | None | None | None | None | None |
| Iberia, St. Mary & Eastern | .... | 40 | Dec. 1, 1937 | None | None | None | None | None |
| Orange & Northwestern | 62 | 62 | Dec. 1, 1937 | None | None | None | None | None |
| Rio Grande City | 21 | 21 | Dec. 1, 1937 | None | None | None | None | None |
| St. Louis, Brownsville & Mexico | 606 | 560 | May 1, 1933 | 5,277,196 | None | 5,277,196 | None | None |
| San Antonio Southern | 45 | 29 | Dec. 1, 1937 | None | None | None | None | None |
| San Antonio, Uvalde & Gulf | 317 | 314 | May 1, 1933 | None | None | None | None | None |
| San Benito & Rio Grande Valley | 116 | 116 | Dec. 1, 1937 | None | None | None | None | None |
| Sugar Land | 42 | 19 | Dec. 1, 1937 | None | None | None | None | None |
| New Jersey & New York | 39 | 29 | June 30, 1938 | 1,022,960 | 366,400 | 1,389,360 | None | 1,022,960 |
| New York, Ontario & Western | 544 | 340 | May 20, 1937 | 39,147,227 | 58,114,043 | 97,261,270 | 25,515 | 35,425,227 |
| New York, Susquehanna & Western | 120 | 120 | June 1, 1937 | 12,878,928 | None | 12,878,928 | None | 12,345,608 |
| Rio Grande Southern | 172 | 172 | Dec. 16, 1929 | 2,728,000 | 934,700 | 3,662,700 | 25,700 | 2,728,000 |
| Rutland | 407 | 393 | May 5, 1938(g) | 9,216,000 | 9,080,300 | 18,296,300 | None | 9,216,000 |
| Smoky Mountain | 31 | 29 | Mar. 20, 1947 | None | 75,000 | 75,000 | None | None |
| Tallulah Falls | 57 | 57 | June 25, 1923 | None | None | None | 102,165 | None |
| Waco, Beaumont, Trinity & Sabine | 42 | 42 | Feb. 8, 1930 | None | 1,113,000 | 1,113,000 | 12,734 | None |
| Wisconsin Central | 1,051 | 906 | Dec. 2, 1932(h) | 38,365,000 | 17,032,700 | 55,397,700 | None | 38,119,000 |
| Wyoming | 29 | 29 | July, 1948 | None | None | None | None | None |

(a) Operated by the New York, New Haven & Hartford.
(b) Changed to trusteeship April 21, 1941.
(c) Operated by the Seaboard Air Line.
(d) Changed to trusteeship July 12, 1944.
(e) Operations ceased Sept. 1946.
(f) Yard switching tracks.
(g) Changed to trusteeship July 21, 1944.
(h) Changed to trusteeship October 1, 1944.

Note:—The effort has been made, in the above table, to list only those securities of bankrupt carriers which are actually in the hands of the investing public—and to exclude securities of one carrier held by an affiliated carrier. Where securities are held by other railways not affiliated with the issuing company, however, they are included in the above list as publicly held. Owing to the complexities of some corporate structures, the decision as to the fact of public or other-carrier ownership has perforce, in some instances, been arbitrary. The purpose has been to give a general picture of the public stake in bankrupt carriers rather than a comprehensive tabulation of legal obligations.

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two years is far more marked in railroad shares than in stocks of other types, especially of industrial companies.

### *The "New Capital" Problem*

The obvious explanation is that investors as a class are not optimistic about the present or future prospects of railroad equity securities. This conclusion is inescapably borne out by the fact shown in one of the accompanying tables that there have been no new issues of railroad stock since 1945 and no substantial amount of new railroad stock financing in any recent year except 1936. Nor is there any prospect that railroad stocks will again become generally desirable in the eyes of the investing public until there is some assurance that railroads will, over a period of years and with some consistency, be permitted to earn enough over and above expenses and taxes, and over and above reasonable expenditures for improvement of property, to pay adequate dividends. Then, and only then, will railroad stocks as a group be again in good demand; then and only then, will it be possible for the railroads to consider the obtaining of new capital through sale of equity securities rather than bonds, notes or equipment trust certificates.

The solution of the problem is only partly in the hands of railroad management. That management has, of necessity, used earnings largely to improve physical plant, to keep ahead of competition and to give to shippers and to travelers constantly more efficient service. It has also, as evidenced by the 1948 dividend record, given proof of its recognition of the need to pay dividends, and of its desire to do so when earnings permit.

But so long as railroad rates on the one hand, and a large part of railroad costs on the other, are controlled by authorities having no responsibility for results; and

so long as other authorities unconcerned with and even unfriendly to the railroads are allowed to bestow endless favors on railroad competitors, the problem is likely to remain, regardless of what railroad management may do.

The Interstate Commerce Commission, as the railroad rate-making authority, has, to be sure, shown increasing awareness of the problem; the same cannot be said, unfortunately, of some of the other authorities who regulate or meddle in other phases of the overall problem.

Considering the whole situation in its broadest aspects, it is difficult to avoid the conclusion that while 1948 was, by itself, a reasonably satisfactory year in railroad finance, future years, through no fault of railroad management but rather through conditions beyond its control, may be much less so, unless vigorous efforts are made to awaken the public to the dangerous significance to the national welfare of undernourished railroads.

## Bond Issues

Among the leading railroad bond issues marketed in 1948 were the following:

In August, the Baltimore & Ohio and New York Central were authorized by the Interstate Commerce Commission to assume joint liability for $9,250,000 of 3⅞ per cent first mortgage series A sinking fund bonds to be sold by the Lakefront Dock & Railroad Terminal of Toledo, Ohio, the proceeds to be used to reimburse the B. & O. and N. Y. C. for advances made in connection with construction of facilities near Toledo. The authorization also approved a selling price of 98.71, the bid of R. W. Pressprich & Co., making the average annual cost approximately 3.97 per cent. The bonds were reoffered to the public at 99.60 and interest, to yield about 3.90 per cent. The bonds, maturing June 1, 1968, will be redeemable at 102⅝ on or before June 1, 1950, the redemption price decreasing gradually to 100¼ on or before June 1, 1967, and to par thereafter. For sinking fund purposes, they will be redeemable at 101⅜ on or before June 1, 1950, at progressively lower prices down to 100⅛ on or before June 1, 1967, and thereafter at par.

In November, the Chesapeake & Ohio sold through a syndicate headed by Halsey, Stuart & Co., $40,000,000 of series H refunding and improvement mortgage bonds, dated December 1 and maturing December 1, 1973. The bonds were sold by the railroad at 98.65, and reoffered to the public at 100¾, with a 3⅞ per cent interest rate, making the net annual interest cost to the C. & O. about 3.96 per cent. The bonds will be redeemable for purposes other than sinking fund on any date prior to maturity at prices ranging from 103⅝ during the first year down to par during the issue's last year. They will also be redeemable for sinking-fund purposes on any semi-annual interest payment date beginning December 1, 1949, at prices ranging from 101⅛ during the year beginning on that date, down to par during the issue's last year. The purpose of the issue was to reimburse the C. & O.'s treasury, in part, for capital expenditures previously made in connection with the company's $152 million road and equipment improvement program, on which approximately $45 million had been spent prior to September 1 of last year.

In July, the Kansas City Southern was authorized to sell $14,000,000 of first mortgage 20-year, 3⅝ per cent series B bonds, to be dated June 1 and mature June 1, 1968. The I.C.C. authorization also approved a selling price of 99.40, as bid by the First Boston Corporation and associates, making the average annual cost to the road approximately 3.67 per cent. The offering price to the public was 100.35 and interest. The bonds will be redeemable at a price of 103⅜ up to and including May 31, 1950, decreasing each two years thereafter to 100⅜, up to and including May 31, 1967, and thereafter at par. They will also be redeemable through the sinking fund at prices ranging from 101¾ to and including May 31, 1950, down to 100¼ to and including May 31, 1967, and thereafter at par. The bonds were to be used to purchase from the Louisiana & Arkansas (wholly-owned K.C.S. subsidiary) a like amount of first mortgage 4 per cent series D bonds, pledged as collateral for L. & A. promissory notes due in 1949. The L. & A., in turn, was authorized to sell to the K. C. S. at par and accrued interest the series D bonds and apply the proceeds of the sale toward prepayment of the notes. After the refunding, the only funded debt of the K. C. S. system, outside of equipment obligations and $1,131,000 of bank notes, was to be the $14,000,000 of series B bonds and $40,000,000 of outstanding series A first mortgage 5 per cent bonds.

In July, the Louisville & Nashville was authorized to issue $30,000,000 of first and refunding mortgage 3¾ per cent series H bonds, to be exchanged for a like amount of first and refunding mortgage 4½ per cent series C bonds in its treasury, the proceeds to be used to reimburse the treasury for capital expenditures made or to be made and for working capital. At the approved selling price of 98.26991, bid by Halsey, Stuart & Co. and associates, the average annual cost of the series H bonds will be approximately 3.83 per cent. They were dated April 1, will mature April 1, 2003, and were sold to the public at 100 and interest. They will be redeemable in whole or in part on any interest-payment date to and including April 1, 1953, at 105; thereafter, to and including April 1, 1998, at a reduction of one-half of one per cent for each five-year period, and thereafter at par, accrued interest applying in each case. They will also be redeemable for sinking fund purposes at prices starting at 102 on any April 1 from 1950 to and including 1953; decreasing gradually each five years thereafter to 100¼ on any April 1 between 1994 and 1998; and thereafter to maturity at par, accrued interest also applying in each case.

In July, the Pennsylvania was authorized to assume liability for $17,570,000 of series F 3½ per cent general mortgage bonds which its lessor, the Philadelphia, Baltimore & Washington, was authorized to sell to the Equitable Life Assurance Society at par and accrued interest. Proceeds from the sale were to be applied toward repayment of advances by the Pennsylvania to its lessor. The bonds, dated May 1, will mature May 1, 1979, and will be redeemable before maturity at amounts depending on the time and purpose of redemption.

In August, the Pennsylvania was authorized to assume liability for payment of $14,518,000 of first mortgage series A bonds, which its lessor, the New York Bay, was authorized to issue and deliver to it at par. The bonds, which will bear interest at 3¾ per cent annually, and will mature August 1, 1978, were sold to the Equitable Life Assurance Society at par. They will be redeemable before maturity at various prices depending on date and purpose of redemption. They will be applied toward cancellation of $11,706,000 of series A 5 per cent first mortgage gold bonds due May 1, 1982, and toward reimbursement of the Pennsylvania for $2,812,000 in advances which it has made to the New York Bay.

In March the Southern Pacific was authorized by the I.C.C. to assume liability as guarantor for $37,396,000 of first mortgage series B bonds to be issued by its subsidiary, the Central Pacific. The I.C.C. also approved a selling price of 99.40, with an interest rate of 3⅝ per cent, the bid of Halsey, Stuart & Co. and associates, on which basis the average annual cost will be approximately 3.67 per

cent. The bonds were reoffered to the public at 100.35 and interest. The proceeds of the issue, together with other funds, were to be used toward redemption of $37,522,500 of outstanding first refunding mortgage 4 per cent gold bonds, due August 1, 1949. The new bonds will mature February 1, 1968, and will be redeemable at par and accrued interest, plus premiums, on a progressively diminishing scale as the bonds approach maturity.

In June the UNION TERMINAL of Dallas, Tex., was authorized to issue not exceeding $4,833,000 of 3 per cent first mortgage bonds, proceeds of the issue to be applied, with other funds, toward redemption at 105 and interest of a like amount of outstanding 3¾ per cent first mortgage bonds. The new bonds, dated June 1, will mature June 1, 1978, and will be redeemable as a whole at any time upon not less than 60 days', nor more than 90 days', notice, at their principal amount and accrued interest, plus a decreasing premium. For sinking fund purposes they will be redeemable at par and accrued interest. The authorization also approved sale of the bonds to Halsey, Stuart & Co. and associates at 99.411 and accrued interest, making the average annual cost approximately 3.03 per cent. Liability for the bonds will be assumed by the Union Terminal's proprietary companies—the Chicago, Rock Island & Pacific; Fort Worth & Denver City; Gulf, Colorado & Santa Fe; Missouri-Kansas-Texas of Texas; St. Louis, San Francisco & Texas; St. Louis Southwestern of Texas; Texas & New Orleans; and Texas & Pacific.

In October the VIRGINIAN was authorized to issue not exceeding $9,500,000 of series C 3¼ per cent first-lien and refunding mortgage bonds, proceeds to be applied toward payment of short-term bank loans of $4,000,000 and to restore cash working capital and provide for contemplated capital expenditures. The bonds will mature October 1, 1973, and will be redeemable at prices ranging from 103½ during the first year down to par during the issue's last year, or, for sinking fund purposes, at prices starting at 100⅞. Sale of the bonds to Shields & Co. and associates on a bid of 99.885, making the average annual cost approximately 3.26 per cent, was also approved by the I.C.C. The bonds were reoffered to the public at 100.50 and interest. The Virginian was also authorized to procure authentication and delivery of not exceeding $6,448,000 of additional series C bonds to be pledged and repledged in whole or in part from time to time as collateral security for short-term notes.

## *Dividend Changes*

The following is a partial list of railroad dividend changes recorded during 1948:

The AKRON, CANTON & YOUNGSTOWN declared extra dividends of 50 cents and $2.00 per share on its common stock, payable, respectively, in April and October. Total payments, including two regular dividends of 50 cents each, were $3.50 per share, against $1.50 in 1947.

The ALABAMA GREAT SOUTHERN for the second successive year increased the dividends on both its common and its 6 per cent preferred stock, paying $8.00 per share on each issue in 1948, compared with $6.50 in 1947 and $5.00 in 1946.

The ATCHISON, TOPEKA & SANTA FE, on December 1, paid a $2.00 extra dividend on its common stock, bringing total payments for the year to $8.00 per share, against $6.00 in 1947 and 1946.

The ATLANTA & WEST POINT increased its dividend from the $2.00 per share paid in 1947 to $4.00, which was the same as was paid in 1946.

The BALTIMORE & OHIO declared a $1.00 dividend, payable December 22, on its 4 per cent non-cumulative preferred stock. This was the first disbursement on that issue since March, 1932.

The CHICAGO & EASTERN ILLINOIS resumed the $1.00 dividend on its Class A stock, which was paid in 1946, but omitted in 1947.

The CHICAGO & NORTH WESTERN declared a year-end dividend, payable December 31, of $2.00 per share on its common stock, compared with 50 cents in 1947 and $1.00 in 1946.

The CHICAGO, BURLINGTON & QUINCY paid a total of $7.00 per share on its capital stock in 1948, an increase of $1.00 over the payments in 1947 and 1946.

The CHICAGO, MILWAUKEE, ST. PAUL & PACIFIC reduced the dividend on the voting trust certificates for its 5 per cent Class A preferred stock to $4.00, from $7.50 in 1947 and $5.00 in 1946.

The CHICAGO, ROCK ISLAND & PACIFIC, emerging from receivership at the beginning of 1948, put both its common and preferred stocks on regular dividend bases of $3.00 and $5.00 per share, respectively.

The CINCINNATI, NEW ORLEANS & TEXAS PACIFIC increased its common dividends from $5.00 per share in 1946 and $6.00 in 1947 to $8.00 in 1948.

The COLUMBIA, NEWBERRY & LAURENS paid $2.00 per share, its first dividend since 1931, when it paid $1.50.

The DELAWARE, LACKAWANNA & WESTERN paid 25 cents per share in April—the first dividend since its $4.00 payment in 1931.

The DENVER & RIO GRANDE WESTERN paid initial dividends of $2.00 per share on its common stock and a total of $10.00 per share on its preferred stock, thus clearing up, as to the latter, accumulated and unpaid dividends for the calendar years 1943 through 1946.

The ERIE paid $1.50 per share on its common stock, against $1.00 per share in 1947, and the same in 1946.

The GREAT NORTHERN paid $3.50 per share on its $6.00 preferred, an increase of 50 cents per share over the $3.00 paid in 1947 and 1946.

The GULF, MOBILE & OHIO paid an initial dividend (declared in 1947) of 50 cents per share on its common stock.

The ILLINOIS CENTRAL paid $6.00 per share on its 6 per cent non-cumulative preferred stock, the first payment on the issue since 1931, when the same amount was paid.

The INTERNATIONAL OF CENTRAL AMERICA paid six dividends totaling $7.50 per share on its 5 per cent cumulative preferred stock, reducing dividends in arrears from $31.00 per share to $28.50. Payments on this stock in 1947 were $8.75, and in 1946 were $6.25 per share.

The KANSAS CITY SOUTHERN paid $1.00 per share on its common stock, its first common stock dividend since 1931.

The KANSAS, OKLAHOMA & GULF made an initial payment of $3.00 per share on its 3 per cent non-cumulative preferred stock.

The LAKE SUPERIOR & ISHPEMING, which had paid $1.25 per share on its common stock in both 1946 and 1947, increased its 1948 dividend to $1.50 per share, plus a year-end dividend payable in 1949.

The NASHVILLE, CHATTANOOGA & ST. LOUIS paid dividends totaling $3.00 per share on its common stock, on which nothing was paid in 1947 and $1.00 per share in 1946.

The NEW YORK CENTRAL declared a dividend of 50 cents per common share, payable January 15, 1949. This was the first dividend on the stock since 1946, when $1.00 was paid.

The NEW YORK, CHICAGO & ST. LOUIS paid $9.00 per share on its 6 per cent preferred stock, compared with $6.00 in 1947 and 1946. The 1948 payments reduced dividends in arrears from $84 to $81 per share. An additional dividend of $7.50 per share declared December 21, 1948, and payable March 15, 1949, will further reduce the dividends in arrears to $73.50 per share.

The NORFOLK & WESTERN paid regular dividends of $3.00 and an extra dividend of $1.00 per share on its common stock. The total $4.00 payment, after adjustment for the 4-for-1 stock split in 1947, would correspond to dividends of $4.375 per share in 1947 and $3.25 per share in 1946.

The NORFOLK SOUTHERN, which had paid no dividends since 1945, paid a total of $2.25 per share on its common stock in 1948.

The PENNSYLVANIA paid dividends of $1.00 per share on its capital stock, compared to 50 cents in 1947 and $1.50 in 1946.

The PIEDMONT & NORTHERN increased its total disbursements per share of common stock to $5.00, from $4.00 in 1947 and $3.00 in 1946.

The PITTSBURGH & LAKE ERIE paid dividends of $8.00 per share of common stock in 1948, against $6.00 per share in 1947 and $3.50 in 1946.

The PITTSBURGH & WEST VIRGINIA paid its first common dividend since 1931—$1.00 per share against $1.50 per share in the earlier year.

The READING, increasing its quarterly common dividend from 25 to 50 cents in July, paid a total of $1.50 per common share, against $1.00 per share in both 1946 and 1947.

The ST. LOUIS-SAN FRANCISCO paid $5.00 per share on its 5 per cent preferred stock, on which no payment was made in 1947.

The ST. LOUIS SOUTHWESTERN paid $5.00 per share on its 5 per cent preferred stock in March, the first dividend on the issue since a payment of $3.75 per share in 1930. The same road also paid an initial dividend of $5.00 per share on its common stock in April.

The SEABOARD AIR LINE paid an initial dividend of $1.00 per share.

The SOUTHERN, increasing its regular quarterly dividend from 75 cents to $1.00 in December, paid a total of $3.25 per share on its common stock in 1948, against $3.00 in each of the two preceding years.

The SOUTHERN PACIFIC, which increased its quarterly dividend during the year from $1.00 to $1.25, paid $4.50 per share of common in 1948, or 50 cents per share more than in 1946 and 1947.

The TENNESSEE, ALABAMA & GEORGIA, which paid no dividends in 1946 and 35 cents per share in 1947, paid 25 cents per share in 1948.

The UNION PACIFIC made actual dividend payments of $11.75 per common share in 1948, of which $5.50 represented dividends declared in 1947. Dividend declarations in 1948 totaled $8.50, of which $6.25 was paid in 1948 and $2.25 on January 3, 1949. After adjustment for the road's 2-for-1 stock split, 1948 dividend disbursements were equivalent to $13.00 and declarations to $12.00 on the old stock. Actual payments in both 1946 and 1947 were $6.00 per share.

The WABASH paid $2.50 per share of common stock in 1948, against $2.00 per share in 1947 and $1.00 in 1946.

The WATERLOO, CEDAR FALLS & NORTHERN, after having paid 50 cents per share in 1946 and the same in 1947, increased its dividends to $1.05 per share in 1948.

The WESTERN OF ALABAMA reduced its disbursements from $5.00 per share in 1946 and $4.00 in 1947 to $3.50 per share in 1948.

The WHEELING & LAKE ERIE, with extra dividends of 68¾ cents each in October and December, raised its total payments to $4.375 per share of common stock in 1948, compared with $3.00 per share in 1947 and 1946.

# MOTIVE POWER ORDERED IN 1948

By FRED C. MILES
Associate Editor

Motive power ordered in the United States last year included 352 steam locomotives (including 283 for export), 2,822 Diesel-electric locomotive units (including 144 for export), and 10 electric locomotives (including 8 for export), according to data made available to *Railway Age*. Domestic railroads ordered 69 steam locomotives (including 12 ordered by the Norfolk & Western from its own shops), and 2,524 Diesel-electric units. Orders were reported from American industrial concerns and private car lines for 153 Diesel-electric units, one Diesel-mechanical unit and two electric locomotives. Diesel-electrics are reported as individual units rather than as locomotives, because many railroads change the arrangement of units in road locomotives to meet varying conditions.

The accompanying detailed list of motive power orders by purchaser was compiled from reports to *Railway Age* by railroads, private car lines, industrial concerns and contract locomotive builders. Because current production of motive power is predominantly in Diesel-electric units, the prompt availability of builders' production figures has been affected and it has not been feasible to incorporate them in this issue.

**Diesel Locomotive Units Ordered in 1948**
**By Horsepower and Purchaser**

| Horsepower | Railroads | Private Car Lines and Others | For Export | Total |
|---|---|---|---|---|
| 2,000 | 232 | 0 | 3 | 235 |
| 1,500 | 1,374 | 2 | 46 | 1,412 |
| 1,350 | 0 | 0 | 2 | 2 |
| 1,300 | 0 | 0 | 8 | 8 |
| 1,200 | 0 | 0 | 6 | 6 |
| 1,000 | 658 | 18 | 16 | 692 |
| 750 | 15 | 5 | 0 | 20 |
| 660 | 144 | 2 | 0 | 146 |
| 650 | 0 | 2 | 0 | 2 |
| 600 | 73 | 18 | 11 | 102 |
| 566 | 0 | 2 | 0 | 2 |
| 500 | 0 | 0 | 5 | 5 |
| 480 | 0 | 2 | 0 | 2 |
| 470 | 0 | 22 | 14 | 36 |
| 380 | 26 | 19 | 16 | 61 |
| 320 | 0 | 1 | 0 | 1 |
| 300 | 0 | 25 | 8 | 33 |
| 240 | 1 | 0 | 3 | 4 |
| 235 | 1 | 0 | 0 | 1 |
| 200 | 0 | 2 | 0 | 2 |
| 190 | 0 | 1* | 4** | 5 |
| 150 | 0 | 33 | 10 | 43 |
| 145 | 0 | 0 | 2 | 2 |
| Total | 2,524 | 154 | 144 | 2,822 |

* Diesel-Mechanical.
** One is Diesel-Mechanical.

**Locomotives Ordered, 1929-1948**

| Year | Steam | Diesel | Electric | Total | U.S. Export |
|---|---|---|---|---|---|
| 1948 | 69 | 2,678* | 2 | 2,749 | 435 |
| 1947 | 79 | 2,149 | 1 | 2,229 | 655 |
| 1946 | 55 | 989 | 8 | 1,052 | 629 |
| 1945 | 148 | 691 | 6 | 845 | 1,985 |
| 1944 | 74 | 680 | 3 | 757 | 134 |
| 1943 | 413 | 635 | 0 | 1,048 | 60 |
| 1942 | 363 | 894 | 12 | 1,269 | 32 |
| 1941 | 302 | 1,104 | 38 | 1,444 | 85 |
| 1940 | 207 | 492 | 13 | 712 | 85 |
| 1939 | 119 | 249 | 32 | 400 | 40 |
| 1938 | 36 | 160 | 29 | 225 | 24 |
| 1937 | 173 | 145 | 36 | 354 | 56 |
| 1936 | 435 | 77 | 24 | 536 | 22 |
| 1935 | 30 | 60 | 7 | 97 | 15 |
| 1934 | 72 | 37 | 76 | 185 | 17 |
| 1933 | 17 | 25 | 0 | 42 | 7 |
| 1932 | 5 | 7 | 0 | 12 | 1 |
| 1931 | 62 | 21 | 91 | 174 | 28 |
| 1930 | 382 | 18 | 21 | 421 | 20 |
| 1929 | 1,055 | 80 | 95 | 1,230 | 106 |

Note: U. S. Government purchases excluded for years 1942-1944.
*1948 Diesel orders are shown in units; Diesel orders for previous years are shown in locomotives, which may include one or more units.

## STEAM LOCOMOTIVES ORDERED IN 1948

### For Service in the United States

| Purchaser | No. | Type | Service | Weight Lb. | Tractive Force | Cylinders | Date of Order | Date of Delivery | Builder |
|---|---|---|---|---|---|---|---|---|---|
| Chesapeake & Ohio | 4 | 2-6-6-2 | Freight | 449,000 | 98,300 | 22x32 | July | Jan.-May '49 | Baldwin |
| | 21 | 2-6-6-2 | Freight | 449,000 | 98,300 | 35x32 | July | Jan.-May '49 | Baldwin |
| Louisville & Nashville | 22 | 2-8-4 | Freight | 456,000 | 79,290 | 25x32 | March | ..... | Lima-Hamilton |
| New York, Chicago & St. Louis | 10 | 2-8-4 | Freight | 440,800 | 64,100 | 25x34 | July | ..... | Lima-Hamilton |
| Norfolk & Western | 7 | 2-8-8-2 | Freight | 582,900 | 152,206 | | April | 1st half '49 | R. R. Shops |
| | 5 | 2-6-6-4 | Freight | 573,000 | 114,000 | 24x30(4) | April | 1st half '49 | R. R. Shops |

### *For Export*

| Purchaser | No. | Type | Service | Weight Lb. | Tractive Force | Cylinders† | Date of Order | Date of Delivery | Builder |
|---|---|---|---|---|---|---|---|---|---|
| India Supply Mission | 100 | 4-6-2 | Passenger | 221,100 | 30,600 | 20¼x28 | June | ..... | Baldwin |
| | 120 | 2-8-2 | Freight | 131,000 | 23,450 | 16¼x24 | November | ..... | Baldwin |
| | 20 | 4-6-2 | Passenger | 127,800 | 18,400 | 15¼x24 | November | ..... | Baldwin |
| Jodhpur Ry | 10 | 4-6-2 | Pass.-Frt. | 131,320 | 18,820 | 15½x26 | January | ..... | Baldwin |
| Manila Ry | 7 | 4-8-2 | Road | 104,000 | 29,200 | 19x26 | January | ..... | Vulcan |
| Maritrop Trading Corp | 12 | 2-8-2 | Freight | 147,000 | 27,625 | 18x22 | March | 4th qtr. '48 | Baldwin |
| National of Mexico | 6 | 4-8-2 | Freight | 321,500 | 44,079 | 26x28 | August | November | American |
| | 4 | 4-8-2 | Freight | 287,116 | 43,116 | 25x28 | August | November | American |
| Scindia State Rys. | 4 | 2-8-2 | Freight | 66,800 | 13,300 | 12x18 | January | ..... | Baldwin |
| Turkish State Rys. | 26* | 2-10-0 | Freight | 244,570 | 58,300 | 23.6x28 | 1947 | ..... | Vulcan |

*Not listed last year.

# DIESEL, ELECTRIC AND OTHER INTERNAL COMBUSTION LOCOMOTIVES

## *Railroad Orders———For Service in the United States*

| Purchaser | No. | Wheel Arrangement | Service | Type | Weight Lb. | Horsepower | Date of Order | Date of Delivery | Builder Locomotive Builder Electrical Equipment Engine Builder |
|---|---|---|---|---|---|---|---|---|---|
| Aberdeen & Rockfish | 1 | B-B | Freight | Diesel-Elec. | 230,000 | 1,500 | July | ..... | Electro-Motive |
| Alton & Southern | 1 | B-B | Switching | Diesel-Elec. | 250,000 | 1,500 | May | November | American-G.E. |
| Apache Ry. | 1 | B-B | Switching | Diesel-Elec. | 240,000 | 1,000 | August | November | Fairbanks, Morse-West. |
| Ashley, Drew & Northern | 3 | B-B | Rd.-Sw. | Diesel-Elec. | 140,000 | 600 | April | September | G.E.-Cooper-Bess. |
| Atchison, Topeka & Santa Fe | 12 | 4(B-B) | Freight | Diesel-Elec. | 920,000 | 6,000 | April | 1948-49 | Electro-Motive |
| | 5 | 4(B-B) | Freight | Diesel-Elec. | 920,000 | 6,000 | October | 1950 | Electro-Motive |
| | 6 | 3(B-B) | Passenger | Diesel-Elec. | 690,000 | 4,500 | October | 1950 | Electro-Motive |
| | 5 | 4(B-B) | Passenger | Diesel-Elec. | 920,000 | 6,000 | October | 1950 | Electro-Motive |
| | 10 | B-B | Switching | Diesel-Elec. | 235,000 | 1,000 | June | ..... | Baldwin-West. |
| | 12 | B-B | Switching | Diesel-Elec. | 235,000 | 1,000 | August | ..... | Baldwin-West. |
| | 9 | B-B | Switching | Diesel-Elec. | 198,500 | 750 | August | ..... | Baldwin-West. |
| | 5 | C-C | Transfer | Diesel-Elec. | 360,000 | 2,000 | Novenber | ..... | Baldwin-West. |
| | 20 | B-B | Switching | Diesel-Elec. | ..... | 1,000 | October | 1949-50 | American-G.E. |
| | 10 | B-B | Switching | Diesel-Elec. | ..... | 1,000 | April | 1949 | American-G.E. |
| Atlanta & West Point | 2 | B-B | Freight | Diesel-Elec. | 230,000 | 1,500 | July | ..... | Electro-Motive |
| | 2 | B-B | Switching | Diesel-Elec. | 248,000 | 1,000 | July | ..... | Electro-Motive |
| | 2 | B-B | Switching | Diesel-Elec. | 235,000 | 1,000 | December | ..... | Baldwin-West. |
| Atlantic Coast Line | 6 | A1A-A1A | Passenger | Diesel-Elec. | 311,000 | 2,000 | May | July | Electro-Motive |
| | 12 | 2(B-B) | Freight | Diesel-Elec. | 460,000 | 3,000 | November | ..... | Electro-Motive |
| Baltimore & Ohio | 7 | 4(B-B) | Pass.-Frt. | Diesel-Elec. | 920,000 | 6,000 | October | Sept. '49 | Electro-Motive |
| Bangor & Aroostook | 8 | B-B | Br. Line | Diesel-Elec. | 216,000 | 1,500 | September | ..... | Electro-Motive |
| | 2 | A1A-A1A | Passenger | Diesel-Elec. | 315,000 | 2,000 | September | ..... | Electro-Motive |
| | 4 | B-B | Switching | Diesel-Elec. | 248,000 | 1,000 | September | ..... | Electro-Motive |
| Belt of Chicago | 2 | B-B | Switching | Diesel-Elec. | 230,000 | 1,000 | April | November | American-G.E. |
| Bessemer & Lake Erie | 1 | B-B | Switching | Diesel-Elec. | 229,000 | 1,000 | January | Feb. '49 | Baldwin-West. |
| | 2 | C-C | Switching | Diesel-Elec. | 325,300 | 1,500 | January | Jan. '49 | Baldwin-West. |
| Boston & Maine | 7 | B-B | Rd.-Sw. | Diesel-Elec. | 230,000 | 1,500 | July | 1st qtr. '49 | American-G.E. |
| | 3 | B-B | Switching | Diesel-Elec. | 199,000 | 660 | July | 1949 | American-G.E. |
| | 2 | B-B | Rd.-Sw. | Diesel-Elec. | 230,000 | 1,500 | November | June '49 | American-G.E. |
| | 1 | B-B | Switching | Diesel-Elec. | 198,000 | 600 | July | Apr. '49 | Electro-Motive |
| | 1 | A1A-A1A | Passenger | Diesel-Elec. | 315,000 | 2,000 | July | Apr. '49 | Electro-Motive |
| | 3 | B-B | Freight | Diesel-Elec. | 230,000 | 1,500 | July | Mar. '49 | Electro-Motive |
| | 4 | B-B | Switching | Diesel-Elec. | 248,000 | 1,000 | June | Jan. '49 | Electro-Motive |
| | 1 | B-B | Switching | Diesel-Elec. | 88,000 | 380 | January | September | G.E.-Cater. |
| | 4 | B-B | Br. Line | Diesel-Elec. | 216,000 | 1,500 | June | 1948 | Electro-Motive |
| | 1 | A1A-A1A | Passenger | Diesel-Elec. | 315,000 | 2,000 | November | ..... | Electro-Motive |
| Canton | 2 | B-B | Switching | Diesel-Elec. | 200,000 | 600 | September | Dec. '49 | Electro-Motive |
| Central of Georgia | 5 | B-B | Freight | Diesel-Elec. | 230,000 | 1,500 | January | ..... | Electro-Motive |
| | 2 | A1A-A1A | Passenger | Diesel-Elec. | 315,000 | 2,000 | January | ..... | Electro-Motive |
| | 1 | .... | Switching | Diesel-Elec. | 70,000 | 240 | June | June '49 | Whit.-West.-Hercules |
| Central of New Jersey | 14 | B-B | ..... | Diesel-Elec. | 255,000 | 1,500 | August | 1948-49 | Fairbanks, Morse-West. |
| Central Vermont | 1 | B-B | Switching | Diesel-Elec. | 248,000 | 1,000 | February | ..... | Electro-Motive |
| Chesapeake & Ohio | 4* | A1A | Passenger | Diesel-Elec. | 315,000 | 2,000 | Dec. '47 | July | Electro-Motive |
| | 7* | B-B | Switching | Diesel-Elec. | 248,000 | 1,000 | Dec. '47 | 1948 | Electro-Motive |
| | 3* | B-B | Switching | Diesel-Elec. | 211,600 | 1,500 | Dec. '47 | 1948-49 | Electro-Motive |
| | 5* | B-B | Switching | Diesel-Elec. | 210,000 | 1,500 | Dec. '47 | 1st qtr. '49 | Electro-Motive |
| | 2* | B-B | Switching | Diesel-Elec. | 248,000 | 1,000 | Dec. '47 | May | Electro-Motive |
| Chicago & Eastern Illinois | 5 | 3(B-B) | Freight | Diesel-Elec. | 690,000 | 4,500 | April | ..... | Electro-Motive |
| | 2 | B-B | Br. Line | Diesel-Elec. | 216,000 | 1,500 | April | ..... | Electro-Motive |
| | 1 | B-B | Br. Line | Diesel-Elec. | 216,000 | 1,500 | November | ..... | Electro-Motive |
| | 2 | B-B | Passenger | Diesel-Elec. | 230,000 | 1,500 | April | ..... | Electro-Motive |
| | 2 | B-B | Switching | Diesel-Elec. | 248,000 | 1,000 | April | ..... | Electro-Motive |
| Chicago & North Western | 7 | B-B | Switching | Diesel-Elec. | 240,000 | 1,000 | April | Feb. '49 | Fairbanks-, Morse |
| | 5 | B-B | Switching | Diesel-Elec. | 240,000 | 1,000 | April | Feb. '49 | Baldwin-West. |
| | 3 | B-B | Switching | Diesel-Elec. | 198,000 | 660 | April | Feb. '49 | Baldwin-West. |
| | 1 | B-B | Freight | Diesel-Elec. | 270,000 | 1,500 | June | July | Baldwin-West. |
| | 5 | 3(B-B) | Freight | Diesel-Elec. | 690,000 | 4,500 | August | ..... | Electro-Motive |
| | 6 | A1A-A1A | Passenger | Diesel-Elec. | 315,000 | 2,000 | August | ..... | Electro-Motive |
| Chicago & Western Indiana | 13 | B-B | Switching | Diesel-Elec. | 240,000 | 1,000 | September | 1949-50 | American-G.E. |
| Chicago, Burlington & Quincy | 2 | 4(B-B) | Freight | Diesel-Elec. | 920,000 | 6,000 | September | ..... | Electro-Motive |
| | 4 | A1A-A1A | Passenger | Diesel-Elec. | 315,000 | 2,000 | September | ..... | Electro-Motive |
| | 3 | A1A-A1A | Passenger | Diesel-Elec. | 315,000 | 2,000 | November | ..... | Electro-Motive |
| | 1 | B-B | Switching | Diesel-Elec. | 248,000 | 1,000 | September | ..... | Electro-Motive |
| | 10 | B-B | Transfer | Diesel-Elec. | 500,000 | 2,000 | April | ..... | Electro-Motive |
| | 4 | B-B | Transfer | Diesel-Elec. | 500,000 | 2,000 | September | ..... | Electro-Motive |
| Chicago Great Western | 10 | B-B | Freight | Diesel-Elec. | 230,000 | 1,500 | March | Feb. '49 | Electro-Motive |
| | 8 | B-B | Freight | Diesel-Elec. | 230,000 | 1,500 | April | Oct. '49 | Electro-Motive |
| | 3 | B-B | Freight | Diesel-Elec. | 230,000 | 1,500 | April | Nov. '49 | Electro-Motive |
| | 1 | B-B | Freight | Diesel-Elec. | 500,000 | 2,000 | May | September | Electro-Motive |
| | 7 | B-B | Freight | Diesel-Elec. | 230,000 | 1,500 | August | Feb. '50 | Electro-Motive |
| | 8 | B-B | Freight | Diesel-Elec. | 500,000 | 2,000 | October | 1949 | Electro-Motive |
| | 3 | B-B | Passenger | Diesel-Elec. | 230,000 | 1,500 | March | 1948-49 | Electro-Motive |
| | 8 | B-B | Passenger | Diesel-Elec. | 230,000 | 1,500 | March | July '49 | Electro-Motive |
| | 3 | B-B | Switching | Diesel-Elec. | 248,000 | 1,000 | April | Dec. '49 | Electro-Motive |
| | 2 | B-B | Switching | Diesel-Elec. | 248,000 | 1,000 | August | Mar. '49 | Electro-Motive |
| | 8 | B-B | Switching | Diesel-Elec. | 248,000 | 1,000 | August | Mar. '50 | Electro-Motive |
| | 2 | B-B | Switching | Diesel-Elec. | 235,000 | 1,000 | October | Jan. '49 | Baldwin-West. |
| | 8 | B-B | Switching | Diesel-Elec. | 235,000 | 1,000 | October | June '49 | Baldwin-West. |
| Chicago, Indianapolis & Louisville | 2 | B-B | Freight | Diesel-Elec. | 230,000 | 1,500 | February | ..... | Electro-Motive |
| | 3 | B-B | Freight | Diesel-Elec. | ..... | 1,500 | December | ..... | Electro-Motive |
| | 2 | B-B | Switching | Diesel-Elec. | ..... | 600 | December | ..... | Electro-Motive |
| Chicago, Milwaukee, St. Paul & Pacific | 8 | B-B | Switching | Diesel-Elec. | ..... | 1,000 | January | Apr. '49 | American-G.E. |
| | 6 | B-B | Switching | Diesel-Elec. | 240,000 | 1,000 | January | Oct.-Nov. | Baldwin-West. |
| | 6 | B-B | Switching | Diesel-Elec. | 240,000 | 1,000 | January | Jan. '49 | Fairbanks, Morse-West. |
| | 4 | B-B | Rd.-Sw. | Diesel-Elec. | ..... | 1,500 | January | 1st. qtr. '49 | American-G.E. |
| | 12 | 2(B-B) | Freight | Diesel-Elec. | 460,000 | 3,000 | January | 1st half '49 | Electro-Motive |
| | 10 | B-B | Freight | Diesel-Elec. | ..... | 1,500 | December | Dec. '49 | Electro-Motive |
| | 1 | B-B | Transfer | Diesel-Elec. | ..... | 2,000 | December | Dec. '49 | Electro-Motive |
| | 3 | B-B | Rd.-Sw. | Diesel-Elec. | ..... | 1,000 | December | 4th qtr. '49 | American-G.E. |
| Chicago, Rock Island & Pacific | 10 | 3(B-B) | Freight | Diesel-Elec. | 690,000 | 4,500 | February | May '49 | Electro-Motive |
| | 5 | B-B | Br. Line | Diesel-Elec. | 216,000 | 1,500 | February | Dec. '48-Jan. '49 | Electro-Motive |
| | 10 | B-B | Passenger | Diesel-Elec. | 230,000 | 1,500 | May | Mid. '49 | Electro-Motive |

| Purchaser | No. | Wheel Arrangement | Service | Type | Weight Lb. | Horsepower | Date of Order | Date of Delivery | Builder<br>Locomotive Builder<br>Electrical Equipment<br>Engine Builder |
|---|---|---|---|---|---|---|---|---|---|
| Chicago, Rock Isl. & Pacific (cont.) | 10 | B-B | Switching | Diesel-Elec. | 248,000 | 1,000 | February | Dec. '48-Jan. '49 | Electro-Motive |
| | 3 | 2(B-B) | Passenger | Diesel-Elec. | 460,000 | 3,000 | September | ..... | Electro-Motive |
| | 8 | 3(B-B) | Freight | Diesel-Elec. | 683,000 | 4,500 | February | Sept.-Oct. | American-G.E. |
| | 5 | B-B | Rd.-Sw. | Diesel-Elec. | 230,000 | 1,500 | February | October | American-G.E. |
| | 5 | B-B | Switching | Diesel-Elec. | 230,000 | 1,000 | February | November | American G.E. |
| | 2 | B-B | Rd.-Sw. | Diesel-Elec. | 325,000 | 1,500 | December | ..... | Baldwin-West. |
| Chicago, St. Paul, Minneapolis & Omaha | 2 | B-B | Switching | Diesel-Elec. | 240,000 | 1,000 | April | Feb. '49 | Baldwin-West. |
| | 1 | B-B | Switching | Diesel-Elec. | 198,000 | 660 | April | Feb. '49 | Baldwin-West. |
| Chicago Short Line | 1 | B-B | Switching | Diesel-Elec. | 198,000 | 600 | July | ..... | Electro-Motive |
| Clinchfield | 10 | B-B | Freight | Diesel-Elec. | 230,000 | 1,500 | September | 1948-49 | Electro-Motive |
| Colorado & Southern | 1 | B-B | Switching | Diesel-Elec. | 248,000 | 1,000 | March | December | Electro-Motive |
| Delaware & Hudson | 10 | B-B | Switching | Diesel-Elec. | 230,000 | 1,000 | March | Nov.-Dec. | American-G.E. |
| | 2 | B-B | Switching | Diesel-Elec. | 246,200 | 1,500 | March | Nov.-Dec. | American-G.E. |
| | 5 | B-B | Switching | Diesel-Elec. | 230,000 | 1,000 | December | 4th qtr. '49 | American-G.E. |
| | 7 | B-B | Rd.-Sw. | Diesel-Elec. | 245,000 | 1,500 | December | 4th qtr. '49 | American-G.E. |
| | 5 | B-B | Rd.-Sw. | Diesel-Elec. | 246,200 | 1,500 | December | 4th qtr. '49 | American-G.E. |
| Delaware, Lackawanna & Western | 5 | 3(B-B) | Freight | Diesel-Elec. | 690,000 | 4,500 | January | 2nd qtr. '49 | Electro-Motive |
| | 3 | B-B | Switching | Diesel-Elec. | 88,000 | 380 | February | October | G.E.-Cater. |
| | 10 | B-B | Switching | Diesel-Elec. | 247,000 | 1,000 | February | 2nd qtr. '49 | American-G.E. |
| Denver & Rio Grande Western | 7 | 4(B-B) | Freight | Diesel-Elec. | 960,000 | 6,000 | October | 1949 | Electro-Motive |
| Detroit Terminal | 2 | B-B | Switching | Diesel-Elec. | 248,000 | 1,000 | October | May '49 | Electro-Motive |
| Donora Southern | 1 | B | Switching | Diesel-Elec. | 70,000 | 235 | October | ..... | G.E.-Cater. |
| East Erie Commercial | 1* | B-B | Switching | Diesel-Elec. | 130,000 | 470 | Dec. '47 | June | G.E.-Cummins |
| Elgin, Joliet & Eastern | 11 | B-B | Switching | Diesel-Elec. | 248,070 | 1,000 | February | 1948-49 | Electro-Motive |
| | 10 | B-B | Switching | Diesel-Elec. | 248,070 | 1,000 | August | 1948-49 | Electro-Motive |
| Erie | 2 | B-B | Switching | Diesel-Elect. | 198,500 | 660 | February | Feb. '49 | Baldwin-West. |
| | 5 | B-B | Switching | Diesel-Elec. | 247,300 | 1,000 | February | 2nd qtr. '49 | Electro-Motive |
| | 2 | B-B | Switching | Diesel-Elec. | 230,000 | 1,000 | February | 2nd qtr. '49 | American-G.E. |
| | 2 | B-B | Switching | Diesel-Elec. | 235,000 | 1,000 | February | Feb. '49 | Baldwin-West. |
| | 2 | B-B | Rd.-Sw. | Diesel-Elec. | 230,000 | 1,500 | February | 2nd qtr. '49 | American-G.E. |
| | 2 | 4(B-B) | Freight | Diesel-Elec. | 920,000 | 6,000 | February | Feb. '49 | Electro-Motive |
| | 2 | 4(B-B) | Freight | Diesel-Elec. | 936,000 | 6,000 | February | 1st qtr. '49 | American-G.E. |
| | 5 | B-B | Passenger | Diesel-Elec. | 303,000 | 2,000 | July | 2nd qtr. '49 | American-G.E. |
| | 6 | B-B | Switching | Diesel-Elec. | 248,000 | 1,000 | October | 4th qtr. '49 | Electro-Motive |
| | 2 | B-B | Switching | Diesel-Elec. | 230,000 | 1,000 | October | 2nd qtr. '49 | American-G.E. |
| | 2 | B-B | Switching | Diesel-Elec. | 230,000 | 1,000 | October | 4th qtr. '49 | American-G.E. |
| | 2 | B-B | Switching | Diesel-Elec. | 235,000 | 1,000 | October | June '49 | Baldwin-West. |
| | 6 | B-B | Switching | Diesel-Elec. | 240,000 | 1,000 | October | 1st qtr. '49 | Lima-Hamilton |
| | 4 | B-B | Switching | Diesel-Elec. | 198,500 | 750 | October | July '49 | Baldwin-West. |
| | 4 | B-B | Switching | Diesel-Elec. | 199,000 | 660 | October | 2nd qtr. '50 | American-G.E. |
| | 5 | B-B | Passenger | Diesel-Elec. | 303,000 | 2,000 | November | Sept. '49 | American-G.E. |
| | 7 | B-B | Rd.-Sw. | Diesel-Elec. | 230,000 | 1,500 | November | Sept.-Oct.'49 | American-G.E. |
| Florida East Coast | 12* | B-B | Freight | Diesel-Elec. | 230,000 | 1,500 | Nov. '47 | December | Electro-Motive |
| | 6 | B-B | Rd.-Sw. | Diesel-Elec. | 216,000 | 1,500 | October | ..... | Electro-Motive |
| Galveston Wharves | 2 | B-B | Switching | Diesel-Elec. | 198,000 | 600 | August | ..... | Electro-Motive |
| Georgia | 1 | B-B | Freight | Diesel-Elec. | 230,000 | 1,500 | April | October | Electro-Motive |
| | 2 | B-B | Freight | Diesel-Elec. | 230,000 | 1,500 | July | ..... | Electro-Motive |
| | 5 | B-B | Switching | Diesel-Elec. | 248,000 | 1,000 | July | ..... | Electro-Motive |
| Grafton & Upton | 1 | B-B | Rd.-Sw. | Diesel-Elec. | 140,000 | 600 | March | August | G.E.-Cooper-Bess. |
| Grand Trunk Western | 8* | B-B | Switching | Diesel-Elec. | 230,000 | 1,000 | 1947 | January | Electro-Motive |
| | 22 | B-B | Freight | Diesel-Elec. | 230,000 | 1,500 | February | ..... | Electro-Motive |
| | 1 | B-B | Switching | Diesel-Elec. | 230,000 | 1,000 | 1948 | September | Electro-Motive |
| Great Northern | 5 | 4(B-B) | Freight | Diesel-Elec. | 920,000 | 6,000 | May | 1948 | Electro-Motive |
| | 1 | 3(B-B) | Freight | Diesel-Elec. | 690,000 | 4,500 | May | October | Electro-Motive |
| | 2 | 2(B-B) | Frt.-Pass. | Diesel-Elec. | 495,500 | 3,000 | May | October | Electro-Motive |
| | 2 | 2(B-B) | Passenger | Diesel-Elec. | 460,000 | 3,000 | May | October | Electro-Motive |
| | 2 | B-B | Passenger | Diesel-Elec. | 245,600 | 1,500 | May | October | Electro-Motive |
| | 1 | 4(B-B) | Freight | Diesel-Elec. | 936,160 | 6,000 | May | August | American-G.E. |
| | 1 | 4(B-B) | Freight | Diesel-Elec. | 936,160 | 6,000 | May | June '49 | American-G.E. |
| Green Bay & Western | 1 | B-B | Switching | Diesel-Elec. | 200,860 | 660 | May | 2nd qtr. '49 | American-G.E. |
| | 2 | B-B | Road | Diesel-Elec. | 232,000 | 1,500 | May | 2nd qtr. '49 | American-G.E. |
| Greenville & Northern | 1 | B-B | Rd.-Sw. | Diesel-Elec. | 140,000 | 600 | February | August | G.E.-Cooper-Bess. |
| Gulf Coast Lines | 4 | B-B | Rd.-Sw. | Diesel-Elec. | 240,000 | 1,500 | May | Feb. '49 | Baldwin-West. |
| | 6 | B-B | Switching | Diesel-Elec. | 235,000 | 1,000 | May | Mar. '49 | Baldwin-West. |
| | 4 | 2(B-B) | Freight | Diesel-Elec. | 460,000 | 3,000 | May | Sept. '49 | Electro-Motive |
| Gulf, Mobile & Ohio | 8* | B-B | Rd.-Sw. | Diesel-Elec. | 240,000 | 1,000 | Dec. '47 | 1948-49 | American-G.E. |
| | 8* | B-B | Rd.-Sw. | Diesel-Elec. | 230,000 | 1,500 | Dec. '47 | 1948-49 | American-G.E. |
| Indiana Harbor Belt | 29 | B-B | Switching | Diesel-Elec. | 248,000 | 1,000 | April | Nov. '49 | Electro-Motive |
| | 2 | B-B | Switching | Diesel-Elec. | 246,000 | 1,000 | April | April '49 | Fairbanks Morse |
| | 2 | B-B | Switching | Diesel-Elec. | 252,000 | 2,000 | April | September | Fairbanks, Morse-West. |
| Indiana Northern | 1 | B-B | Switching | Diesel-Elec. | 248,000 | 1,000 | April | ..... | Electro-Motive |
| International-Great Northern | 4 | 2(B-B) | Freight | Diesel-Elec. | 460,000 | 3,000 | May | Sept. '49 | Electro-Motive |
| | 2 | 3(B-B) | Freight | Diesel-Elec. | 690,000 | 4,500 | May | Sept. '49 | Electro-Motive |
| | 2 | B-B | Switching | Diesel-Elec. | 230,000 | 1,000 | May | Sept. '49 | American-G.E. |
| Ironton | 1 | B-B | Switching | Diesel-Elec. | 235,000 | 1,000 | September | October | Baldwin-West. |
| | 1 | B-B | Switching | Diesel-Elec. | 235,000 | 1,000 | December | ..... | Baldwin-West. |
| Kansas, Oklahoma & Gulf | 2 | 3(B-B) | Freight | Diesel-Elec. | 690,000 | 4,500 | July | ..... | Electro-Motive |
| Kelly's Creek | 2 | B-B | Rd.-Sw. | Diesel-Elec. | 140,000 | 600 | November | ..... | G.E.-Cooper-Bess. |
| Kentucky & Indiana Terminal | 2 | B-B | Switching | Diesel-Elec. | 230,000 | 1,000 | May | September | Baldwin-West. |
| | 5 | B-B | Switching | Diesel-Elec. | 230,000 | 1,000 | November | May '49 | Fairbanks, Morse |
| Lake Superior & Ishpeming | 3 | B-B | Rd.-Sw. | Diesel-Elec. | 230,000 | 1,500 | May | 1949 | American-G.E. |
| Lake Superior Terminal & Transfer | 2 | B-B | Switching | Diesel-Elec. | 248,000 | 1,000 | April | 1949 | Electro-Motive |
| Lake Terminal | 5 | B-B | Switching | Diesel-Elec. | 248,000 | 1,000 | February | ..... | Electro-Motive |
| Lakeside & Marblehead | 2 | B-B | Rd.-Sw. | Diesel-Elec. | 140,000 | 600 | September | ..... | G.E.-Cooper-Bess. |
| Lehigh Valley | 5 | 4(B-B) | Freight | Diesel-Elec. | 931,500 | 6,000 | June | 1948 | American-G.E. |
| | 5 | 4(B-B) | Freight | Diesel-Elec. | 920,000 | 6,000 | June | 1948 | Electro-Motive |
| | 1 | B-B | Switching | Diesel-Elec. | 230,000 | 1,000 | September | May '49 | American-G.E. |
| | 1 | B-B | Rd.-Sw. | Diesel-Elec. | 244,000 | 1,500 | September | Mar. '49 | American-G.E. |
| | 1 | B-B | Rd.-Sw. | Diesel-Elec. | 230,000 | 1,500 | September | Mar. '49 | American-G.E. |
| | 1 | B-B | Rd.-Sw. | Diesel-Elec. | 257,500 | 1,500 | September | Nov. '48 | Baldwin-West. |
| | 4 | B-B | Switching | Diesel-Elec. | 248,000 | 1,000 | September | 2nd qtr. '49 | Electro-Motive |
| | 3 | B-B | Switching | Diesel-Elec. | 248,000 | 1,000 | October | Sept. '49 | Electro-Motive |
| | 4 | B-B | Switching | Diesel-Elec. | 235,000 | 1,000 | October | 2nd qtr. '49 | Baldwin-West. |
| | 2 | B-B | Switching | Diesel-Elec. | 235,000 | 1,000 | December | ..... | Baldwin-West. |
| Louisiana & Arkansas | 3 | B-B | Passenger | Diesel-Elec. | 230,000 | 1,500 | July | Feb. '49 | Electro-Motive |
| | 1 | B-B | Freight | Diesel-Elec. | 230,000 | 1,500 | October | ..... | Electro-Motive |
| Louisville & Nashville | 1 | B-B | Switching | Diesel-Elec. | 140,000 | 600 | January | July | G.E.-Cooper-Bess. |
| | 5 | B-B | Switching | Diesel Elec. | 241,000 | 1,000 | February | 1948 | American-G.E. |
| | 20 | B-B | Switching | Diesel-Elec. | 199,000 | 660 | February | 4th qtr. '49 | American-G.E. |
| | 5 | B-B | Switching | Diesel-Elec. | 241,000 | 1,000 | February | Oct. '49 | Electro-Motive |

| Purchaser | No. | Wheel Arrangement | Service | Type | Weight Lb. | Horsepower | Date of Order | Date of Delivery | Builder<br>Locomotive Builder<br>Electrical Equipment<br>Engine Builder |
|---|---|---|---|---|---|---|---|---|---|
| Louisville & Nashville (cont.) | 4 | A1A-A1A | Passenger | Diesel-Elec. | 315,000 | 2,000 | February | Mar. '49 | Electro-Motive |
| | 1 | 5(B-B) | Freight | Diesel-Elec. | 1,220,000 | 7,500 | February | August | Electro-Motive |
| Manufacturers Ry. | 1 | B-B | Switching | Diesel-Elec. | 230,000 | 1,000 | January | December | American-G.E. |
| McCloud River | 1* | .... | Switching | Diesel-Elec. | ..... | 1,500 | Dec. '47 | October | Baldwin-West. |
| Minneapolis & St. Louis | 1 | B-B | Switching | Diesel-Elec. | 80,000 | 380 | July | November | G.E.-Cater. |
| | 3 | 2(B-B) | Freight | Diesel-Elec. | 460,000 | 3,000 | November | ..... | Electro-Motive |
| | 5 | B-B | Switching | Diesel-Elec. | 243,000 | 1,000 | ..... | ..... | American-G.E. |
| Minneapolis, Northfield & Southern | 5 | C-C | Freight | Diesel-Elec. | 360,000 | 2,000 | January | 1948 | Baldwin-West. |
| Minneapolis, St. Paul & Sault Ste. Marie | 4 | 3(B-B) | Freight | Diesel-Elec. | 673,210 | 4,500 | January | 1948-49 | Electro-Motive |
| | 1 | B-B | Switching | Diesel-Elec. | 245,000 | 1,000 | January | August | Electro-Motive |
| | 2 | B-B | Switching | Diesel-Elec. | 235,000 | 1,000 | October | June '49 | Baldwin-West. |
| Missouri-Illinois | 1 | B-B | Switching | Diesel-Elec. | 248,000 | 1,000 | January | ..... | Electro-Motive |
| Missouri-Kansas-Texas | 20 | B-B | Freight | Diesel-Elec. | 230,000 | 1,500 | April | July '49 | Electro-Motive |
| | 1 | B-B | Rd.-Sw. | Diesel-Elec. | 140,000 | 600 | June | December | G.E.-Cooper-Bess. |
| | 4 | B-B | Freight | Diesel-Elec. | ..... | 1,500 | ..... | November | American-G.E. |
| | 14 | B-B | Freight | Diesel-Elec. | ..... | 1,500 | ..... | 1st qtr. '49 | American-G.E. |
| | 4 | A1A-A1A | Passenger | Diesel-Elec. | ..... | 2,000 | ..... | 3rd qtr. '49 | American-G.E. |
| Missouri Pacific | 26 | B-B | Freight | Diesel-Elec. | 230,000 | 1,500 | June | ..... | Electro-Motive |
| | 5 | B-B | Switching | Diesel-Elec. | 235,000 | 1,000 | May | ..... | Baldwin-West. |
| Monongahela Connecting | 5 | B-B | Switching | Diesel-Elec. | 230,000 | 1,000 | March | Jan. '49 | American-G.E. |
| Nashville, Chattanooga & St. Louis | 9 | B-B | Frt.-Pass. | Diesel-Elec. | 219,000 | 1,500 | January | 1948-49 | Electro-Motive |
| | 12 | B-B | Frt.-Pass. | Diesel-Elec. | 221,000 | 1,500 | January | 1948-49 | Electro-Motive |
| | 7 | B-B | Frt.-Pass. | Diesel-Elec. | 219,000 | 1,500 | October | Mar. '49 | Electro-Motive |
| | 2 | B-B | Frt.-Pass. | Diesel-Elec. | 221,000 | 1,500 | October | Mar. '49 | Electro-Motive |
| New Orleans Public Belt | 3 | B-B | Switching | Diesel-Elec. | 200,000 | 660 | June | Mar. '49 | Baldwin-West. |
| New York Central | 24 | B-B | Freight | Diesel-Elec. | 230,000 | 1,500 | April | Aug. '49 | Electro-Motive |
| | 8 | B-B | Switching | Diesel-Elec. | 248,000 | 1,000 | April | Dec. '49 | Electro-Motive |
| | 12 | B-B | Freight | Diesel-Elec. | 236,000 | 1,500 | April | July '49 | American-G. E. |
| | 16 | B-B | Switching | Diesel-Elec. | 230,000 | 1,000 | April | Sept. '49 | American-G. E. |
| | 10 | B-B | Switching | Diesel-Elec. | 198,000 | 600 | April | Jan. '50 | American-G. E. |
| | 8 | B-B | Freight | Diesel-Elec. | 240,000 | 2,000 | April | Sept. '49 | Fairbanks, Morse-West. |
| | 20 | B-B | Freight | Diesel-Elec. | 230,000 | 1,500 | December | ..... | Electro-Motive |
| | 45 | B-B | Switching | Diesel-Elec. | ..... | 1,000 | December | ..... | Electro-Motive |
| | 7 | B-B | Freight | Diesel-Elec. | ..... | 2,000 | December | ..... | Fairbanks, Morse-West. |
| | 5 | B-B | Switching | Diesel-Elec. | ..... | 1,000 | December | ..... | Fairbanks, Morse |
| | 2 | .... | Transfer | Diesel-Elec. | ..... | 2,000 | December | ..... | Fairbanks, Morse |
| | 6 | B-B | Switching | Diesel-Elec. | ..... | 1,000 | December | ..... | Lima-Hamilton |
| | 10 | B-B | Freight | Diesel-Elec. | ..... | 1,500 | December | ..... | American-G. E. |
| | 14 | B-B | Rd Sw. | Diesel-Elec. | ..... | 1,500 | December | ..... | American-G. E. |
| | 5 | B-B | Rd. Sw. | Diesel-Elec. | ..... | 1,000 | December | ..... | American-G. E. |
| | 5 | B-B | Switching | Diesel-Elec. | ..... | 1,000 | December | ..... | American-G. E. |
| New York, Chicago & St. Louis | 9 | B-B | Switching | Diesel-Elec. | 240,000 | 1,000 | August | Jan. '49 | Fairbanks, Morse |
| | 4 | B-B | Switching | Diesel-Elec. | 240,000 | 1,000 | August | Jan. '49 | Lima-Hamilton |
| New York, New Haven & Htfd. | 15 | B-B | Road | Diesel-Elec. | 300,000 | 2,000 | May | 1948-49 | American-G. E. |
| | 12 | B-B | Switching | Diesel-Elec. | 189,400 | 660 | May | 1948 | American-G. E. |
| | 7 | B-B | Rd. Sw. | Diesel-Elec. | 228,500 | 1,500 | May | 1948 | American-G. E. |
| | 2 | B-B | Rd. Sw. | Diesel-Elec. | 222,500 | 1,000 | May | December | American-G. E. |
| Norfolk Southern | 3 | B-B | Switching | Diesel-Elec. | 132,300 | 600 | May | July | American-G. E. |
| Northern Pacific | 2 | 3(B-B) | Passenger | Diesel-Elec. | 690,000 | 4,500 | February | May '49 | Electro-Motive |
| Pennsylvania | 6 | 2(A1A-A1A) | Freight | Diesel-Elec. | 710,320 | 4,000 | February | December | Fairbanks, Morse-G. E. |
| | 12 | B-B | Switching | Diesel-Elec. | 242,000 | 1,000 | February | April '49 | Fairbanks, Morse-West. |
| | 16 | B-B | Freight | Diesel-Elec. | 238,000 | 1,500 | February | Jan. '49 | Electro-Motive |
| | 16 | B-B | Freight | Diesel-Elec. | 227,000 | 1,500 | February | May '49 | Electro-Motive |
| | 4 | B-B | Switching | Diesel-Elec. | 243,550 | 1,000 | February | December | Electro-Motive |
| | 10 | B-B | Switching | Diesel-Elec. | 194,000 | 600 | February | May '49 | Electro-Motive |
| | 27 | B-B | Switching | Diesel-Elec. | 240,000 | 1,000 | February | Jan. '49 | Baldwin-West. |
| | 27 | B-B | Switching | Diesel-Elec. | 197,600 | 660 | February | Jan. '49 | Baldwin-West. |
| | 10 | B-B | Switching | Diesel-Elec. | 199,000 | 660 | February | May '49 | American-G. E. |
| | 10 | B-B | Switching | Diesel-Elec. | 233,400 | 1,000 | February | Mar. '49 | American-G. E. |
| | 14 | A1A-A1A | Passenger | Diesel-Elec. | 319,600 | 2,000 | June | Apr. '49 | Electro-Motive |
| | 23 | B-B | Freight | Diesel-Elec. | 238,000 | 1,500 | June | May '49 | Electro-Motive |
| | 12 | B-B | Switching | Diesel-Elec. | 250,000 | 2,000 | June | Feb. '49 | Fairbanks, Morse-West. |
| | 4 | A1A-A1A | Passenger | Diesel-Elec. | 319,600 | 2,000 | October | Apr. '49 | Electro-Motive |
| | 10 | B-B | Freight | Diesel-Elec. | 238,000 | 1,500 | October | Aug. '49 | Electro-Motive |
| | 10 | B-B | Freight | Diesel-Elec. | 227,000 | 1,500 | October | Aug. '49 | Electro-Motive |
| | 20 | B-B | Freight | Diesel-Elec. | 250,000 | 1,500 | October | June '49 | Baldwin-West. |
| | 20 | B-B | Freight | Diesel-Elec. | 250,000 | 1,500 | October | June '49 | Baldwin-West. |
| | 50 | B-B | Switching | Diesel-Elec. | 197,600 | 660 | October | May '49 | Baldwin-West. |
| | 30 | B-B | Switching | Diesel-Elec. | 240,000 | 1,000 | October | Apr. '49 | Baldwin-West. |
| | 20 | B-B | Switching | Diesel-Elec. | 242,000 | 1,000 | October | Aug. '49 | Fairbanks, Morse |
| | 20 | B-B | Switching | Diesel-Elec. | 88,550 | 380 | October | June '49 | General Electric |
| Peoria & Pekin Union | 2 | B-B | Switching | Diesel-Elec. | 248,000 | 1,000 | August | ..... | Electro-Motive |
| Philadelphia, Bethlehem & New England | 1 | B-B | Switching | Diesel-Elec. | 248,000 | 1,000 | July | ..... | Electro-Motive |
| Pittsburgh & Lake Erie | 10 | B-B | Switching | Diesel-Elec. | 230,000 | 1,000 | April | Sept. '49 | American-G. E. |
| | 4 | A1A-A1A | Passenger | Diesel-Elec. | 306,000 | 2,000 | August | May '49 | American-G. E. |
| Pittsburgh & West Virginia | 2 | B-B | Freight | Diesel-Elec. | 250,000 | 2,000 | January | October | Fairbanks, Morse-West. |
| Point Comfort & Northern | 1 | B-B | Switching | Diesel-Elec. | 88,000 | 380 | July | November | G.-E.-Cater. |
| Reading | 15 | B-B | Switching | Diesel-Elec. | 229,000 | 1,000 | March | 1948 | Baldwin-West. |
| Roscoe, Snyder & Pacific | 1 | B-B | Switching | Diesel-Elec. | 198,000 | 600 | February | ..... | Electro-Motive |
| | 1 | B-B | Rd. Sw. | Diesel-Elec. | 140,000 | 600 | November | ..... | G. E.-Cooper-Bess. |
| St. Louis-San Francisco | 6* | 3(B-B) | Freight | Diesel-Elec. | ..... | 4,500 | Dec. '47 | 1948-49 | American-G. E. |
| | 4* | B-B | Switching | Diesel-Elec. | ..... | 1,000 | Dec. '47 | November | Baldwin-West. |
| | 3* | B-B | Switching | Diesel-Elec. | ..... | 1,000 | Dec. '47 | Mar. '49 | American-G. E. |
| | 2* | B-B | Switching | Diesel-Elec. | ..... | 1,000 | Dec. '47 | Mar. '49 | Fairbanks, Morse-West. |
| | 4 | 3(B-B) | Freight | Diesel-Elec. | 690,000 | 4,500 | October | ..... | Electro-Motive |
| | 2 | 3(B-B) | Freight | Diesel-Elec. | ..... | 4,500 | October | Mar. '49 | American-G. E. |
| | 2 | 3(B-B) | Freight | Diesel-Elec. | ..... | 4,500 | November | Apr. '49 | American-G. E. |
| St. Louis Southwestern | 2 | B-B | Switching | Diesel-Elec. | 248,000 | 1,000 | September | May '49 | Electro-Motive |
| Santa Maria Valley | 1 | B-B | Rd.-Sw. | Diesel-Elec. | 140,000 | 600 | February | July | C. E.-Cooper-Bess. |
| | 1 | B-B | Rd.-Sw. | Diesel-Elec. | 140,000 | 600 | September | ..... | G. E.-Cooper-Bess. |
| Seaboard Air Line | 5 | B-B | Rd.-Sw. | Diesel-Elec. | 230,000 | 1,500 | February | 2d qtr. '49 | American-G. E. |
| | 23 | B-B | Rd.-Sw. | Diesel-Elec. | 230,000 | 1,500 | July | 2d qtr. '49 | American-G. E. |
| | 4 | A1A-A1A | Passenger | Diesel-Elec. | 315,000 | 2,000 | August | Mar. '49 | Electro-Motive |
| Southern | 64 | B-B | Freight | Diesel-Elec. | 230,000 | 1,500 | October | ..... | Electro-Motive |
| | 6 | A1A-A1A | Passenger | Diesel-Elec. | 315,000 | 2,000 | October | ..... | Electro-Motive |
| | 5 | B-B | Switching | Diesel-Elec. | 240,000 | 1,000 | January | November | Baldwin-West. |
| | 25 | B-B | Switching | Diesel-Elec. | 230,000 | 1,500 | October | 3rd qtr. '49 | American-G. E. |
| Southern Pacific | 10 | B-B | Switching | Diesel-Elec. | 240,000 | 1,000 | February | 1948 | Baldwin-West. |
| | 3 | 3(A1A-A1A) | Passenger | Diesel-Elec. | 918,000 | 6,000 | May | 1949 | American-G. E. |
| | 6 | 2(A1A-A1A) | Passenger | Diesel-Elec. | 606,000 | 4,000 | May | 1949 | American-G. E. |

| Purchaser | No. | Wheel Arrangement | Service | Type | Weight Lb. | Horsepower | Date of Order | Date of Delivery | Builder Locomotive Builder Electrical Equipment Engine Builder |
|---|---|---|---|---|---|---|---|---|---|
| Southern Pacific (cont.) | 30 | 4(B-B) | Freight | Diesel-Elec. | 936,100 | 6,000 | June | 1949 | Electro-Motive |
| | 40 | B-B | Switching | Diesel-Elec. | 248,000 | 1,000 | June | 1949 | Electro-Motive |
| | 3 | A1A-A1A | Freight | Diesel-Elec. | 256,000 | 1,500 | June | 1948 | Baldwin-West. |
| | 12 | C-C | Freight | Diesel-Elec. | 325,000 | 1,500 | June | 1949 | Baldwin-West. |
| | 10 | B-B | Freight | Diesel-Elec. | 139,000 | 6,000 | June | 1949 | G. E.-Cooper-Bess. |
| Spokane, Portland & Seattle | 1 | B-B | Road | Diesel-Elec. | 235,000 | 1,500 | April | November | Electro-Motive |
| | 1 | A1A-A1A | Road | Diesel-Elec. | 315,000 | 2,000 | April | July | Electro-Motive |
| | 2 | 4(B-B) | Road | Diesel-Elec. | 928,000 | 6,000 | April | Mar. '49 | American-G. E. |
| | 1 | 4(B-B) | Road | Diesel-Elec. | 928,000 | 6,000 | June | Mar. '49 | American-G. E. |
| Terminal R. R. Assn. of St. Louis | 6 | B-B | Switching | Diesel-Elec. | 248,000 | 1,000 | February | 1949 | Electro-Motive |
| | 2 | B-B | Switching | Diesel-Elec. | 240,000 | 1,000 | February | 1949 | Fairbanks, Morse |
| | 2 | B-B | Switching | Diesel-Elec. | 240,000 | 1,000 | February | 1949 | Baldwin-West. |
| | 2 | B-B | Switching | Diesel-Elec. | 240,000 | 1,000 | February | 1949 | American-G. E. |
| Texas Mexican | 2 | B-B | Sw. | Diesel-Elec. | 198,500 | 750 | December | ..... | Baldwin-West. |
| Texas & Pacific | 36 | B-B | Freight | Diesel-Elec. | 230,000 | 1,500 | July | 1949 | Electro-Motive |
| | 2 | A1A-A1A | Passenger | Diesel-Elec. | 310,000 | 2,000 | July | Apr. '49 | Electro-Motive |
| Trona | 2 | C-C | Transfer | Diesel-Elec. | 360,000 | 2,000 | February | ..... | Baldwin-West. |
| Union Pacific | 1 | B-B | Rd.-Sw. | Diesel-Elec. | 270,000 | 1,500 | February | 1949 | Baldwin-West. |
| Union R.R. (Pittsburgh) | 14 | B-B | Switching | Diesel-Elec. | 198,000 | 600 | January | 1948 | Electro-Motive |
| | 14 | B-B | Switching | Diesel-Elec. | 250,000 | 1,000 | January | 1948-49 | Electro-Motive |
| | 7 | B-B | Switching | Diesel-Elec. | 250,000 | 1,500 | January | Feb. '49 | Baldwin-West. |
| | 8 | B-B | Switching | Diesel-Elec. | 198,000 | 600 | October | Jan. '50 | Electro-Motive |
| | 10 | B-B | Switching | Diesel-Elec. | 246,000 | 1,000 | October | 1949 | Electro-Motive |
| | 2 | B-B | Switching | Diesel-Elec. | 500,600 | 2,000 | October | Jan. '50 | Electro-Motive |
| | 5 | B-B | Switching | Diesel-Elec. | 250,000 | 1,500 | October | May '49 | American-G. E. |
| Upper Merion & Plymouth | 1 | B-B | Switching | Diesel-Elec. | 190,000 | 600 | July | ..... | G. E.-Cooper-Bess. |
| Ventura County | 1 | B-B | Rd.-Sw. | Diesel-Elec. | 140,000 | 600 | April | December | G. E.-Cooper-Bess. |
| Wabash | 5 | 3(B-B) | Freight | Diesel-Elec. | 690,000 | 4,500 | April | ..... | Electro-Motive |
| | 6 | A1A-A1A | Passenger | Diesel-Elec. | 315,000 | 2,000 | September | Nov. '49 | Electro-Motive |
| | 3 | B-B | Switching | Diesel-Elec. | 198,000 | 600 | March | Aug. '49 | Electro-Motive |
| | 2 | B-B | Switching | Diesel-Elec. | 248,000 | 1,600 | February | ..... | Electro-Motive |
| | 5 | 3(B-B) | Freight | Diesel-Elec. | ..... | 4,500 | August | 1949 | American-G. E. |
| | 3 | 2(A1A-A1A) | Passenger | Diesel-Elec. | ..... | 4,000 | August | 1949 | American-G. E. |
| | 2 | B-B | Switching | Diesel-Elec. | | 1,000 | January | May '49 | American-G. E. |
| | 1 | B-B | Switching | Diesel-Elec. | 240,000 | 1,000 | January | Jan. '49 | Baldwin-West. |
| | 2 | B-B | Switching | Diesel-Elec. | 240,000 | 1,000 | January | Feb. '49 | Fairbanks, Morse |
| Western of Alabama | 1 | B-B | Freight | Diesel-Elec. | 241,000 | 1,500 | July | October | Baldwin-West. |
| | 1 | B-B | Passenger | Diesel-Elec. | 230,000 | 1,500 | March | ..... | Electro-Motive |
| | 2 | B-B | Freight | Diesel-Elec. | 230,000 | 1,500 | July | ..... | Electro-Motive |
| | 1 | B-B | Switching | Diesel-Elec. | 248,000 | 1,000 | July | November | Electro-Motive |
| Wisconsin Central | 3 | 3(B-B) | Freight | Diesel-Elec. | 690,000 | 4,500 | February | ..... | Electro-Motive |
| | 1 | B-B | Switching | Diesel-Elec. | 248,000 | 1,000 | February | ..... | Electro-Motive |
| Wyandotte Terminal | 1 | B-B | Switching | Diesel-Elec. | 198,500 | 660 | May | ..... | Baldwin-West. |
| Youngstown & Northern | 4 | B-B | Switching | Diesel-Elec. | 230,000 | 1,000 | May | Sept. '49 | American-G. E. |

*Not listed last year.

## Private Car Lines and Other Orders — For Service in the United States

| Purchaser | No. | Wheel Arrangement | Service | Type | Weight Lb. | Horsepower | Date of Order | Date of Delivery | Builder Locomotive Builder Electrical Equipment Engine Builder |
|---|---|---|---|---|---|---|---|---|---|
| Allegheny Ludlum Steel Corp. | 1 | B | Switching | Diesel-Elec. | 50,000 | 150 | February | September | G. E.-Cummins |
| Amalgamated Sugar Co. | 1 | B | Switching | Diesel-Elec. | 50,000 | 150 | March | August | G. E.-Cummins |
| Amer. Agricultural Chemical Co. | 1 | B | Switching | Diesel-Elec. | 140,000 | 600 | August | October | G. E.-Cooper-Bess. |
| American Locomotive Co. | 1 | B-B | Switching | Diesel-Elec. | 100,000 | 300 | March | June | G. E.-Cummins |
| American Smelting & Refining Co | 1 | B-B | Switching | Diesel-Elec. | 240,000 | 1,000 | January | August | Baldwin-West. |
| | 1 | B-B | Switching | Diesel-Elec. | 100,000 | 380 | July | Aug. '49 | Whit-West.-Cater. |
| | 1 | B-B | Switching | Diesel-Elec. | 160,000 | 470 | September | ..... | G. E.-Cummins |
| American Steel Foundries | 1 | B-B | Switching | Diesel-Elec. | 130,000 | 480 | May | September | Whit.-West.-Hercules |
| American Tube & Stamping Plant | 1 | B-B | Switching | Diesel-Elec. | 90,000 | 300 | November | December | G. E.-Cummins |
| Archer-Daniels-Midland Co. | 1 | B | Switching | Diesel-Elec. | 50,000 | 150 | November | ..... | G. E.-Cummins |
| Ash Grove Lime & Portland Cement Co. | 1 | B | Switching | Diesel-Elec. | 50,000 | 150 | June | September | G. E.-Cummins |
| Atlantic Steel Co. | 1 | B-B | Switching | Diesel-Elec. | 160,000 | 470 | January | September | G. E.-Cummins |
| Ballard & Ballard Co | 1 | B | Switching | Diesel-Elec. | 50,000 | 150 | August | ..... | G. E.-Cummins |
| Berlin Mills | 2 | B-B | Switching | Diesel-Elec. | 140,000 | 600 | May | Jan. '49 | G. E.-Cooper-Bess. |
| Bethlehem Steel Co. | 1 | B | Industrial | Diesel-Elec. | 40,000 | 150 | March | ..... | G. E.-Cummins |
| | 1 | B | Switching | Diesel-Elec. | 100,000 | 300 | February | December | G. E.-Cummins |
| Bigelow-Sanford Carpet Co. | 1 | B | Switching | Diesel-Elec. | 50,000 | 150 | April | September | G. E.-Cummins |
| Calumet & Hecla Consolidated Copper Co | 2 | B-B | Switching | Diesel-Elec. | 240,000 | 1,000 | February | July | Baldwin-West. |
| Carnegie-Illinois Steel Co. | 4 | B-B | Switching | Diesel-Elec. | 160,000 | 470 | September | ..... | G. E.-Cummins |
| Central Foundry Co. | 1 | B-B | Switching | Diesel-Elec. | 100,000 | 300 | August | November | G. E.-Cummins |
| Chicago Mill & Lumber Co. | 1 | B-B | Switching | Diesel-Elec. | 88,000 | 380 | March | October | G. E.-Caterpillar |
| Cincinnati Milling Machine Co. | 1 | B-B | Switching | Diesel-Elec. | 100,000 | 300 | May | October | G. E.-Cummins |
| Cleveland Electric Illuminating Co. | 2 | B-B | Switching | Diesel-Elec. | 130,000 | 470 | March | July | G. E.-Cummins |
| Columbus & Southern Ohio Electric Co | 1 | B | Switching | Diesel-Elec. | 50,000 | 150 | August | September | G. E.-Cummins |
| Consolidated Rock Products Co. | 1 | B-B | Switching | Diesel-Elec. | 130,000 | 470 | September | ..... | G. E.-Cummins |
| Continental Can Co. | 1 | B-B | Switching | Diesel-Elec. | 90,000 | 300 | November | December | G. E.-Cummins |
| Crucible Steel Co. of America | 2 | B | Switching | Diesel | 50,000 | 190 | September | Oct. '49 | Whit.-West.-Hercules |
| | 1 | B-B | Switching | Diesel-Elec. | 90,000 | 300 | May | July | G. E.-Cummins |
| | 2 | B-B | Switching | Diesel-Elec. | 190,000 | 600 | October | ..... | G. E.-Cooper-Bess. |
| Deepwater Operating Co. | 1 | B | Switching | Diesel-Elec. | 50,000 | 150 | August | September | G. E.-Cummins |
| Detroit Edison Co. | 2 | B-B | Switching | Diesel-Elec. | 198,000 | 600 | July | ..... | Electro-Motive |
| Diamond Alkali Co. | 1 | B | Switching | Diesel-Elec. | 50,000 | 150 | August | October | G. E-Cummins |
| Dow Chemical Co. | 3 | B-B | Switching | Diesel-Elec. | 160,000 | 470 | June | ..... | G. E.-Cummins |
| Duke Power Co. | 1 | B | Switching | Diesel-Elec. | 50,000 | 150 | June | ..... | G. E.-Cummins |
| Electro Metallurgical Co. | 1 | B-B | Switching | Diesel-Elec. | 140,000 | 566 | January | May | Whit. West.-Buda |
| Elliott Co. | 1 | B | Switching | Diesel-Elec. | 50,000 | 150 | August | ..... | G. E.-Cummins |
| Empire Steel Co. | 1 | B-B | Switching | Diesel-Elec. | 100,000 | 300 | September | November | G. E.-Cummins |
| Ethyl Corp. | 1 | B-B | Switching | Diesel-Elec. | 160,000 | 470 | May | December | G. E.-Cummins |

| Purchaser | No. | Wheel Arrangement | Service | Type | Weight Lb. | Horsepower | Date of Order | Date of Delivery | Builder Locomotive Builder Electrical Equipment Engine Builder |
|---|---|---|---|---|---|---|---|---|---|
| Ford Motor Co | 2 | B | Switching | Diesel-Elec. | 50,000 | 150 | August | ..... | G. E.-Cummins |
| Fordyce Lumber Co | 1 | B-B | Switching | Diesel-Elec. | 90,000 | 300 | June | July | G. E.-Cummins |
| General Electric Co | 1 | B | Switching | Diesel-Elec. | 50,000 | 150 | January | March | G. E.-Cummins |
| | 1 | B | Switching | Diesel-Elec. | 50,000 | 150 | May | August | G. E.-Cummins |
| | 1 | C-C | Logging | Diesel-Elec. | 180,000 | 1,000 | October | ..... | G. E.-Caterpillar |
| Great Lakes Steel Co | 1 | B-B | Switching | Diesel-Elec. | 198,000 | 600 | January | ..... | Electro-Motive |
| | 2 | B-B | Switching | Diesel-Elec. | 169,000 | 600 | February | ..... | G. E.-Cooper-Bess. |
| Great Northern Paper Co | 1 | B-B | Switching | Diesel-Elec. | 90,000 | 300 | November | .... | G. E.-Cummins |
| Hartford Electric Light Co | 1 | B | Switching | Diesel-Elec. | 50,000 | 150 | August | ..... | G. E.-Cummins |
| Holly Sugar Corp | 1 | B | Switching | Diesel-Elec. | 50,000 | 150 | February | May | G. E.-Cummins |
| Harrisburg Steel Corp | 1 | B | Switching | Diesel-Elec. | 50,000 | 150 | February | May | G. E.-Cummins |
| Interlake Iron Corp | 1 | B-B | Switching | Diesel-Elec. | 130,000 | 470 | September | .... | G. E.-Cummins |
| Iowa Illuminating Gas & Electric Co | 1 | B-B | Switching | Diesel-Elec. | 100,000 | 300 | July | November | G. E.-Cummins |
| Iroquois Gas Co | 1 | B-B | Switching | Diesel-Elec. | 90,000 | 300 | October | November | G. E.-Cummins |
| Jones & Laughlin Steel Corp | 2 | B-B | Switching | Diesel-Elec. | 160,000 | 470 | April | December | G. E.-Cummins |
| Kaiser Engineer's | 1 | B-B | Rd.-Sw. | Diesel-Elec. | 325,000 | 1,500 | December | ..... | Baldwin-West. |
| Keokuk Electro-Metals Co | 1 | B-B | Switching | Diesel-Elec. | 90,000 | 300 | June | October | G. E.-Cummins |
| Kennecott Copper Corp | 1 | B-B | Rd.-Sw. | Diesel-Elec. | 266,000 | 1,500 | December | ..... | Baldwin-West. |
| Kingan & Co | 1 | B-B | Switching | Diesel-Elec. | 140,000 | 600 | October | ..... | G. E.-Cooper-Bess. |
| Koppers Co | 1 | B | Switching | Diesel-Elec. | 50,000 | 150 | July | ..... | G. E.-Cummins |
| Lehigh Structural Steel Co | 1 | B-B | Switching | Diesel-Elec. | 90,000 | 300 | April | June | G. E.-Cummins |
| Lone Star Cement Co | 1 | B | Switching | Diesel-Elec. | 50,000 | 150 | April | September | G. E.-Cummins |
| | 1 | B | Switching | Diesel-Elec. | 50,000 | 150 | June | September | G. E.-Cummins |
| Mathieson Alkali Works | 1 | B-B | Switching | Diesel-Elec. | 198,000 | 600 | February | ..... | Electro-Motive |
| McNary Dam Contractors | 3 | B | Switching | Diesel-Elec. | 50,000 | 150 | November | ..... | G. E.-Cummins |
| Michigan Northern Power Co | 1 | B-B | Switching | Diesel-Elec. | 140,000 | 566 | January | April | Whit-West.-Buda |
| Minneapolis & Ontario Paper Co. | 2 | B-B | Switching | Diesel-Elec. | 160,000 | 470 | July | December | G. E.-Cummins. |
| Modesto & Empire Traction Co. | 1 | B-B | Rd.-Sw. | Diesel-Elec. | 140,000 | 600 | June | ..... | G. E.-Cooper-Bess. |
| Monolith Portland Cement Co. | 1 | B | Switching | Diesel-Elec. | 50,000 | 150 | March | April | G. E.-Cummins |
| National Tube Co | 1 | B-B | Switching | Diesel-Elec. | 100,000 | 300 | May | ..... | G. E.-Cummins |
| Oliver Iron Mfg. Co | 5 | B-B | Switching | Diesel-Elec. | 235,000 | 1,000 | December | ..... | Baldwin-West. |
| Pardee & Curtin Lumber Co | 1 | B-B | Switching | Diesel-Elec. | 90,000 | 300 | January | July | G. E.-Cummins |
| Peters Creek Coal Co | 1 | B-B | Switching | Diesel-Elec. | 90,000 | 300 | May | ..... | G. E.-Cummins |
| Phelps Dodge Corp | 2 | B-B | Switching | Diesel-Elec. | 248,000 | 1,000 | March | ..... | Electro-Motive |
| | 3 | B-B | Switching | Diesel-Elec. | 248,000 | 1,000 | November | ..... | Electro-Motive |
| Phoenix Apollo Steel Co | 1 | B | Switching | Diesel-Elec. | 50,000 | 150 | March | ..... | G. E.-Cummins |
| | 1 | B | Switching | Diesel-Elec. | 50,000 | 150 | September | ..... | G. E.-Cummins |
| Pittsburgh Limestone Corp | 1 | B | Switching | Diesel-Elec. | 70,000 | 320 | January | ..... | G. E.-Hercules |
| Pittsburgh Plate Glass | 1 | B-B | Switching | Diesel-Elec. | 100,000 | 300 | April | June | G. E.-Cummins |
| Pittsburgh Steel Co | 1 | B | Switching | Diesel-Elec. | 100,000 | 300 | May | ..... | G. E.-Cummins |
| | 1 | B-B | Switching | Diesel-Elec. | 160,000 | 470 | January | September | G. E.-Cummins |
| | 1 | B-B | Switching | Diesel-Elec. | 160,000 | 470 | May | December | G. E.-Cummins |
| Public Service Co. of Colorado | 1 | B-B | Switching | Diesel-Elec. | 90,000 | 300 | November | ..... | G. E.-Cummins |
| Public Service Co. of Indiana | 1 | B-B | Switching | Diesel-Elec. | 130,000 | 470 | February | June | G. E.-Cummins |
| | 1 | B-B | Switching | Diesel-Elec. | 130,000 | 470 | October | ..... | G. E.-Cummins |
| Rotary Electric Steel Co | 1 | B-B | Switching | Diesel-Elec. | 90,000 | 300 | August | October | G. E.-Cummins |
| | 1 | B-B | Switching | Diesel-Elec. | 90,000 | 300 | October | December | G. E- Cummins |
| St. Joseph Lead Co | 1 | B-B | Switching | Diesel-Elec. | 190,000 | 600 | September | ..... | G. E.-Cooper-Bess. |
| Sheffield Steel Corp | 1 | B-B | Switching | Diesel-Elec. | 88,000 | 380 | January | September | G. E.-Caterpillar |
| Singer Manufacturing Co | 1 | B-B | Switching | Diesel-Elec. | 140,000 | 600 | October | ..... | G. E.-Cooper-Bess. |
| Sloss-Sheffield Steel & Iron Co | 1 | B-B | Switching | Diesel-Elec. | 198,500 | 660 | March | September | Baldwin-West. |
| Sturm & Dillard Co | 1 | B-B | Switching | Diesel-Elec. | 90,000 | 300 | April | July | G. E.-Cummins |
| Tennessee Coal, Iron & R. R. Co. | 2 | B-B | Mine | Electric | 50,000 | 380 | June | ..... | General Electric |
| | 9 | B-B | Mine | Electric | 50,000 | 380 | October | ..... | General Electric |
| Tennessee Valley Authority | 1 | B-B | Switching | Diesel-Elec. | 198,500 | 660 | April | ..... | Baldwin-West. |
| Texas Co | 1 | B-B | Switching | Diesel-Elec. | 100,000 | 300 | March | June | G. E.-Cummins |
| Timken Roller Bearing Co | 1 | B-B | Switching | Diesel-Elec. | 140,000 | 600 | February | December | G. E.-Cooper-Bess. |
| Truax-Traer Coal Co | 2 | B-B | Mine | Electric | 50,000 | 300 | January | December | General Electric |
| Union Lumber Co | 2 | B-B | Switching | Diesel-Elec. | 198,500 | 750 | October | ..... | Baldwin-West. |
| U. S. Gypsum Co | 1 | B-B | Switching | Diesel-Elec. | 90,000 | 300 | October | October | G. E.-Cummins |
| Weirton Steel Co | 1 | B | Switching | Diesel-Elec. | 50,000 | 150 | June | August | G. E.-Cummins |
| Weyerhauser Timber Co | 1 | B-B | Switching | Diesel-Elec. | 240,000 | 1,000 | January | April | Fairbanks, Morse-West. |
| | 2 | B-B | Switching | Diesel-Elec. | 240,000 | 1,000 | November | Apr. '49 | Fairbanks, Morse-West. |
| Wheeling-Steel Corp | 2 | B-B | Switching | Diesel-Elec. | 198,000 | 600 | January | ..... | Electro-Motive |
| | 1 | B-B | Switching | Diesel-Elec. | 248,000 | 1,000 | January | ..... | Electro-Motive |
| | 1 | B-B | Switching | Diesel-Elec. | 130,000 | 480 | October | 1949 | Whit.-West.-Hercules |
| Whitcomb Locomotive Co | 2 | B | Switching | Diesel-Elec. | 50,000 | 150 | June | Apr. '49 | Whit.-West.-Cummins |
| | 2 | B | Switching | Diesel-Elec. | 70,000 | 200 | June | May '49 | Whit.-West.-Cummins |
| | 4 | B-B | Switching | Diesel-Elec. | 100,000 | 380 | June | Oct. '49 | Whit.-West.-Hercules |
| | 2 | B-B | Switching | Diesel-Elec. | 160,000 | 650 | June | Mar. '49 | Whit.-West.-Buda |
| Whitin Machine Works | 2 | B-B | Switching | Diesel-Elec. | 46,000 | 150 | August | ..... | G. E.-Cummins |
| Youngstown Sheet & Tube Co | 3 | B-B | Switching | Diesel-Elec. | 198,500 | 750 | October | ..... | Baldwin-West. |

## For Export

| Purchaser | No. | Wheel Arrangement | Service | Type | Weight Lb. | Horsepower | Date of Order | Date of Delivery | Builder Locomotive Builder Electrical Equipment Engine Builder |
|---|---|---|---|---|---|---|---|---|---|
| Agencia McFarlane, S. A. | 1 | B-B | Switching | Diesel-Elec. | 100,000 | 380 | April | November | Whit.-West.-Hercules |
| Bas Congo au Katanga | 2 | C-C | Road | Diesel-Elec. | 208,000 | 1,350 | June | Sept. '49 | Whit.-West.-Superior |
| Beauharnois Light Heat & Power Co. (Canada) | 1 | B-B | Switching | Diesel-Elec. | 130,000 | 470 | February | ..... | G. E.-Cummins |
| British Columbia Ry (Canada) | 3 | B-B | Rd.-Sw. | Diesel-Elec. | 140,000 | 600 | November | ..... | G. E.-Cooper-Bess. |
| Canada Gulf Terminal Ry | 1 | B-B | Switching | Diesel-Elec. | 88,000 | 380 | June | November | G. E.-Caterpillar |
| Canadian General Electric Co | 1 | B-B | Switching | Diesel-Elec. | 90,000 | 300 | July | October | G. E.-Cummins |
| | 1 | B-B | Switching | Diesel-Elec. | 100,000 | 300 | June | October | G. E.-Cummins |
| Canadian Gypsum Co | 1 | B-B | Switching | Diesel-Elec. | 130,000 | 470 | August | ..... | G. E.-Cummins |
| Canadian Pacific | 3 | A1A-A1A | Passenger | Diesel-Elec. | 315,000 | 2,000 | September | Dec. '49 | Electro-Motive |
| | 13 | B-B | Rd.-Sw. | Diesel-Elec. | 240,000 | 1,000 | January | December | Baldwin-West. |
| | 5 | B-B | Rd.-Sw. | Diesel-Elec. | 230,000 | 1,500 | September | Sept. '49 | American-G. E. |
| | 3 | B-B | Switching | Diesel-Elec. | 230,000 | 1,000 | September | Sept. '49 | American-G. E. |
| | 12 | B-B | Freight | Diesel-Elec. | 230,000 | 1,500 | September | Sept. '49 | American-G. E. |

| Purchaser | No. | Wheel Arrangement | Service | Type | Weight Lb. | Horsepower | Date of Order | Date of Delivery | Builder Locomotive Builder Electrical Equipment Engine Builder |
|---|---|---|---|---|---|---|---|---|---|
| Caroni, Ltd. (British West Indies) | 5* | C | Rd.-Sw. | Diesel-Mech. | 50,000 | 180 | 1947 | May '48 | Vulcan-Cater. |
| Chile Exploration Co. | 5 | B-B | Rd.-Sw. | Diesel-Elec. | 170,000 | 500 | October | 1949 | Whit.-West.-Superior |
| Cie des Phosphates | 14 | B-B | Switching | Diesel-Elec. | 88,000 | 380 | March | 1949 | Whit.-West.-Cater. |
| Columbia Cellulose Co. (Canada) | 1 | B-B | Switching | Diesel-Elec. | 90,000 | 300 | July | ..... | G. E.-Cummins |
| Cuban-Dominican Sales Corp. | 1 | B-B | Rd.-Sw. | Diesel-Elec. | 140,000 | 600 | March | December | G. E.-Cooper-Bess. |
| Dominion Tar & Chemical Co. (Canada) | 1 | B | Switching | Diesel-Elec. | 50,000 | 150 | September | October | G. E.-Cummins |
| Donahue Bros. | 1 | B | Switching | Diesel-Elec. | 50,000 | 150 | August | ..... | G. E.-Cummins |
| Eastern Car Co. (Canada) | 1 | B-B | Switching | Diesel-Elec. | 90,000 | 300 | April | June | G. E.-Cummins |
| Eastern Sugar Associates (Puerto Rico) | 2 | C | Switching | Diesel-Mech. | 40,000 | 190 | May | November | Whit.-West.-Cater. |
| Guatemala United Fruit Co. | 6 | C-B-C | Freight | Diesel-Elec. | 240,000 | 1,200 | May | ..... | American-G. E. |
| Helwan Portland Cement Co. (Egypt) | 2 | C | Switching | Diesel-Elec. | 45,000 | 145 | May | Oct. '49 | Vulcan-West-Hercules |
| International General Electric (for Chile) | 1 | B | Industrial | Electric | 40,000 | 150 | February | December | General Electric |
| (for Mexico) | 1 | B | Industrial | Electric | 40,000 | 150 | May | ..... | General Electric |
| | 1 | B-B | Rd.-Sw. | Diesel-Elec. | 140,000 | 600 | June | ..... | G. E.-Cooper-Bess. |
| (for Cuba) | 2 | B | Switching | Diesel-Elec. | 50,000 | 150 | March | September | G. E.-Cummins |
| | 1 | B-B | Switching | Diesel-Elec. | 90,000 | 300 | May | October | G. E.-Cummins |
| (for Philippines) | 1 | B | Switching | Diesel-Elec. | 50,000 | 150 | May | September | G. E.-Cummins |
| (for British Guiana) | 2 | B | Switching | Diesel-Elec. | 50,000 | 150 | August | ..... | G. E.-Cummins |
| (for Holland) | 2 | B | Switching | Diesel-Elec. | 50,000 | 150 | October | ..... | G. E.-Cummins |
| (for Argentina) | 1 | B | Switching | Diesel-Elec. | 50,000 | 150 | May | October | G. E.-Cummins |
| (for Belgium) | 1 | B-B | Switching | Diesel-Elec. | 90,000 | 300 | June | November | G. E.-Cummins |
| (for Belgian Congo) | 8 | C-C | Passenger | Diesel-Elec. | 200,000 | 1,300 | August | ..... | American-G. E. |
| Montreal Locomotive Works | 1 | B-B | Switching | Diesel-Elec. | 100,000 | 300 | October | ..... | G. E.-Cummins |
| National of Mexico | 19 | B-B | Passenger | Diesel-Elec. | 230,000 | 1,500 | July | ..... | Electro-Motive |
| Pacific Great Eastern Ry. (Can.) | 1 | B-B | Switching | Diesel-Elec. | 130,000 | 470 | April | June | G. E.-Cummins |
| | 6 | B-B | Rd.-Sw. | Diesel-Elec. | 140,000 | 600 | October | ..... | G. E.-Cooper-Bess. |
| Quebec North Shore Paper Co. | 1 | B-B | Switching | Diesel-Elec. | 90,000 | 300 | January | June | G. E.-Cummins |
| San Vicente Steel (Chile) | 2 | B-B | Switching | Diesel-Elec. | 130,000 | 470 | August | ..... | G. E.-Cummins |
| Steel Co. of Canada | 1 | B-B | Switching | Diesel-Elec. | 160,000 | 470 | January | August | G. E.-Cummins |
| Union Miniere du Haut Katanga | 6 | B-B | Rd.-Sw. | Electric | 140,000 | ... | March | 1949 | Whitcomb-West. |
| Usines Gustaves Boel | 1 | B | Switching | Diesel-Elec. | 50,000 | 190 | January | Apr. '49 | Whit.-West.-Hercules |
| | 3 | B | Switching | Diesel-Elec. | 70,000 | 240 | April | Aug. '49 | Whit.-West.-Hercules |
| Welkom Mining (South Africa) | 2 | B-B | Switching | Diesel-Elec. | 130,000 | 470 | March | ..... | G. E.-Cummins |
| | 1 | B-B | Switching | Diesel-Elec. | 130,000 | 470 | May | ..... | G. E.-Cummins |
| M. Wolff et ses Fils | 1 | B | Switching | Diesel-Mech. | 60,000 | 190 | April | June '49 | Whit.-West.-Cater |

*Not listed last year.

### Canada

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Canadian National | 20 | B-B | Switching | Diesel-Elec. | 237,000 | 1,000 | March | Mar. '49 | Montreal Loco. Works |

# EQUIPMENT PRICES REPORTED IN 1948

Unit prices of typical freight-train and passenger-train cars and locomotives purchased by Class 1 railroads in this country last year are listed in the accompanying tables. The data were obtained from Interstate Commerce Commission reports authorizing railroads to issue and sell equipment trust certificates and notes, proceeds from the sale of which were used in acquiring the equipment.

### Price Variations

Differences in the types of materials specified, as well as differences in the types and numbers of specialties ordered, account, in large measure, for what seem to be wide variations in the prices of similar types of equipment. Also, during 1948 the cost of the labor and materials required to build railroad equipment continued to increase, and, therefore, a car or locomotive ordered early in the year may have cost considerably less than identical equipment purchased late in the year. As reported here last year, many of the I.C.C. authorizations said the unit prices listed were based on manufacturing costs on the date the equipment was ordered and were subject to increase.

**Freight-Train Car Prices**

| No. of Cars | Type | Construction | Capacity | Price |
|---|---|---|---|---|
| 385 | Hopper | Steel | 70-ton | $4,530 |
| 589 | Hopper | Steel | 70-ton | 4,471 |
| 100 | Rack | Steel | ..... | 6,250 |
| 270 | Hopper | Steel | 70-ton | 4,175 |
| 600 | Hopper | Steel | 70-ton | 4,530 |
| 400 | Hopper | Steel | 70-ton | 4,471 |
| 1,200 | Hopper | Steel | 70-ton | 4,175 |
| 775 | Hopper | Steel | 70-ton | 4,350 |
| 325 | Hopper | Steel | 70-ton | 4,460 |
| 950 | Hopper | Steel | 70-ton | 3,566 |
| 500 | Cov. Hopper | Steel | 70-ton | 4,893 |
| 1,000 | Hopper | Steel | 70-ton | 3,566 |
| 150 | Gondola | Steel | 50-ton | 3,575 |
| 200 | Gondola | Steel | 50-ton | 3,632 |
| 100 | Gondola | Steel | 50-ton | 3,569 |
| 25 | Gondola | Steel | 50-ton | 4,480 |
| 25 | Gondola | Steel | 50-ton | 4,268 |
| 1,000 | Hopper | Steel | 70-ton | 3,555 |
| 250 | Gondola | Steel | 50-ton | 3,599 |
| 50 | Gondola | Steel | 50-ton | 3,568 |
| 500 | Hopper | Steel | 70-ton | 4,452 |
| 100 | Hopper | Steel | 70-ton | 3,800 |
| 50 | Gondola | Steel | 70-ton | 5,450 |
| 300 | Gondola | Steel | 50-ton | 3,650 |
| 50 | Box | Steel | 50-ton | 5,600 |
| 1,000 | Gondola | Composite | 50-ton | 2,580 |
| 1,600 | Box | Steel | 50-ton | 3,900 |
| 250 | Cov. Hopper | Steel | 70-ton | 4,992 |
| 1,800 | Gondola | Composite | 50-ton | 2,580 |
| 1,000 | Hopper | Steel | 50-ton | 3,330 |
| 1,000 | Hopper | Steel | 50-ton | 3,330 |
| 1,000 | Box | Steel | 50-ton | 3,500 |
| 150 | Hopper | Steel | 70-ton | 4,892 |

## Freight-Train Car Prices (cont.)

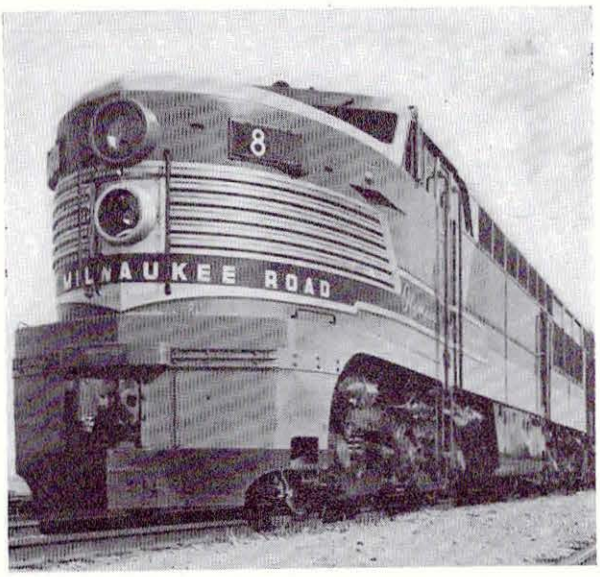
| No. of Cars | Type | Construction | Capacity | Price |
|---|---|---|---|---|
| 150 | Gondola | Steel | 70-ton | 4,539 |
| 200 | Box | Steel | 50-ton | 4,739 |
| 200 | Box | Steel | 50-ton | 4,739 |
| 15 | Tank | Steel | 7,000g. | 4,050 |
| 50 | Gondola | Steel | 70-ton | 5,453 |
| 1,000 | Hopper | Steel | 50-ton | 3,830 |
| 100 | Hopper | Steel | 70-ton | 5,450 |
| 200 | Hopper | Steel | 70-ton | 3,833 |
| 1,000 | Box | Steel | 55-ton | 4,600 |
| 400 | Gondola | Steel | 70-ton | 5,455 |
| 1,400 | Gondola | Steel | 70-ton | 4,500 |
| 500 | Gondola | Steel | 70-ton | 5,000 |
| 100 | Gondola | Steel | 70-ton | 4,225 |
| 400 | Gondola | Steel | 70-ton | 6,175 |
| 100 | Hopper | Steel | 55-ton | 3,880 |
| 50 | Gondola | Steel | 70-ton | 6,065 |
| 160 | Hopper | Steel | 70-ton | 5,170 |
| 500 | Hopper | Steel | 55-ton | 3,602 |
| 300 | Box | Steel | 50-ton | 4,310 |
| 150 | Hopper | Steel | 70-ton | 5,106 |
| 100 | Phosphate | Steel | 70-ton | 7,105 |
| 200 | Cov. Hopper | Steel | 70-ton | 6,126 |
| 500 | Box | Steel | 50-ton | 4,517 |
| 300 | Gondola | Steel | 50-ton | 3,564 |
| 100 | Gondola | Steel | 50-ton | 3,604 |
| 50 | Gondola | Steel | 70-ton | 5,755 |
| 1,300 | Box | S. U. | 50-ton | 4,950 |
| 2,050 | Box | Steel | 50-ton | 4,989 |
| 650 | Gondola | Steel | 50-ton | 5,216 |
| 80 | Caboose | Steel | 30-ton | 8,156 |
| 1,000 | Gondola | Steel | 50-ton | 4,851 |
| 500 | Flat | Steel | 70-ton | 4,350 |
| 100 | Cov. Hopper | Steel | 70-ton | 5,331 |
| 50 | Gondola | Steel | 70-ton | 6,587 |
| 200 | Gondola | Steel | 50-ton | 5,312 |
| 50 | Auto-Box | Steel | 50-ton | 7,843 |
| 200 | Box | Steel | 50-ton | 6,049 |

## Locomotive Prices

| No. bought | Type | Service | Horsepower or tractive force | Price |
|---|---|---|---|---|
| 1 | Diesel-Elec. | B-Unit Frt. | 1,500-hp. | $157,776 |
| 2 | Diesel-Elec. | Pass. | 2,000-hp. | 220,000 |
| 4 | Diesel-Elec. | Sw. | 1,000-hp. | 102,500 |
| 8 | Diesel-Elec. | Br. Line | 1,500-hp. | 153,406 |
| 13 | Diesel-Elec. | Road | 1,500-hp. | 155,107 |
| 15 | Diesel-Elec. | Freight | 1,500-hp. | 124,000 |
| 5 | Diesel-Elec. | Sw. | 1,000-hp. | 102,819 |
| 5 | 2-6-6-6 | Frt. | ..... | 388,371 |
| 2 | Diesel-Elec. | Sw. | 1,000-hp. | 94,885 |
| 12 | 0-8-0 | Sw. | ..... | 113,371 |
| 2 | Steam Turbine Elec. | Pass. | 6,000-hp. | 547,451 |
| 4 | Diesel-Elec. | Pass. | 2,000-hp. | 214,232 |
| 10 | 0-8-0 | Sw. | ..... | 119,119 |
| 2 | Diesel-Elec. | Sw. | 1,000-hp. | 95,142 |
| 3 | Diesel-Elec. | Rd.-Sw. | 1,500-hp. | 137,200 |
| 1 | Diesel-Elec. | Rd.-Sw. | 1,500-hp. | 142,200 |
| 2 | Diesel-Elec. | Rd.-Sw. | 1,500-hp. | 134,200 |
| 15 | Diesel-Elec. | Frt. | 1,500-hp. | 149,695 |
| 2 | Diesel-Elec. | Pass. | 1,500-hp. | 164,044 |
| 2 | Diesel-Elec. | Rd.-Sw. | 1,500-hp. | 147,931 |
| 2 | Diesel-Elec. | Sw. | 1,000-hp. | 94,350 |
| 7 | Diesel-Elec. | Sw. | 1,000-hp. | 102,925 |
| 5 | Diesel-Elec. | Sw. | 1,000-hp. | 102,835 |
| 3 | Diesel-Elec. | Sw. | 660-hp. | 80,230 |
| 1 | Diesel-Elec. | Frt. | 4,500-hp. | 470,000 |
| 15 | Diesel-Elec. | Frt. | 6,000-hp. | 612,000 |
| 6 | Diesel-Elec. | Sw. | 1,000-hp. | 96,000 |
| 1 | Diesel-Elec. | B-Unit Pass. | 2,000-hp. | 211,950 |
| 8 | Diesel-Elec. | Freight | 4,500-hp. | 431,600 |
| 5 | Diesel-Elec. | Sw. | 1,500-hp. | 128,750 |
| 5 | Diesel-Elec. | Rd.-Sw. | 1,000-hp. | 94,850 |
| 2 | Diesel-Elec. | Sw. | 1,000-hp. | 103,115 |
| 1 | Diesel-Elec. | Sw. | 660-hp. | 80,465 |
| 3 | Diesel-Elec. | Frt. | 6,000-hp. | 630,471 |
| 2 | Diesel-Elec. | Frt. | 6,000-hp. | 663,372 |
| 2 | Diesel-Elec. | Sw. | 1,000-hp. | 102,500 |
| 2 | Diesel-Elec. | Sw. | 660-hp. | 79,900 |
| 10 | Diesel-Elec. | Rd.-Sw. | 1,500-hp. | 150,000 |
| 4 | Diesel-Elec. | Sw. | 1,000-hp. | 102,500 |
| 4 | Diesel-Elec. | Frt. | 4,500-hp. | 439,241 |
| 22 | Diesel-Elec. | Sw. | 660-hp. | 78,500 |
| 11 | Diesel-Elec. | Sw. | 1,000-hp. | 100,500 |
| r | Diesel-Elec. | Frt. | 3,000-hp. | 309,936 |
| 4 | Diesel-Elec. | Rd.-Sw. | 1,500-hp. | 131,942 |
| 10 | Diesel-Elec. | Frt. | 4,500-hp. | 436,993 |
| 6 | Diesel-Elec. | A-Unit Pass. | 2,000-hp. | 232,500 |
| 6 | Diesel-Elec. | A-Unit Pass. | 2,000-hp. | 238,500 |
| 2r | Diesel-Elec. | Sw. | 1,000-hp. | 105,100 |
| 7 | Diesel-Elec. | Rd.-Sw. | 1,500-hp. | 151,000 |
| 19 | Diesel-Elec. | A-Unit Frt. | 1,500-hp. | 179,800 |
| 5 | Diesel-Elec. | B-Unit Frt. | 1,500-hp. | 159,800 |
| 4 | Diesel-Elec. | A-Unit Frt. | 2,000-hp. | 230,000 |
| 2 | Diesel-Elec. | B-Unit Frt. | 2,000-hp. | 215,000 |
| 2 | Diesel-Elec. | A-Unit Pass. | 2,000-hp. | 228,000 |
| 2 | Diesel-Elec. | B-Unit Pass. | 2,000 -hp. | 213,700 |
| 15 | Diesel-Elec. | Road | 2,000-hp. | 205,000 |
| 7 | Diesel-Elec. | Rd.-Sw. | 1,500-hp. | 160,000 |
| 2 | Diesel-Elec. | Rd.-Sw. | 1,000-hp. | 122,500 |
| 12 | Diesel-Elec. | Sw. | 660-hp. | 80,000 |
| 12 | Diesel-Elec. | A-Unit Frt. | 1,500-hp. | 190,000 |
| 10 | Diesel-Elec. | B-Unit Frt. | 1,500-hp. | 162,000 |
| 13 | Diesel-Elec. | Sw. | 1,000-hp. | 105,500 |
| 31 | Diesel-Elec. | Sw. | 1,000-hp. | 106,000 |
| 2 | Diesel-Elec. | Sw. | 1,000-hp. | 124,000 |
| 44 | Diesel-Elec. | Sw. | 660-hp. | 83,000 |
| 10 | Diesel-Elec. | Sw. | 380-hp. | 53,000 |
| 12 | Diesel-Elec. | Sw. | 2,000-hp. | 190,000 |
| 2 | Diesel-Elec. | Frt. | 6,000-hp. | 641,000 |
| 2 | Diesel-Elec. | Frt. | 6,000-hp. | 679,000 |
| 7 | Diesel-Elec. | Frt. | 4,500-hp. | 515,000 |
| 22 | Diesel-Elec. | Sw. | 380-hp. | 49,000 |
| 3 | Diesel-Elec. | Frt. | 6,000-hp. | 600,000 |

## Passenger-Train Car Prices

| No. Bought | Type | Construction | Price |
|---|---|---|---|
| 12 | Coach-Lnge. | St. Steel | $113,211 |
| 3 | Lunch counter-Kitch.-Crew. | St. Steel | 137,240 |
| 3 | Dining-Theater | St. Steel | 117,671 |
| 3 | Lunch counter-Tav.-Lnge. | St. Steel | 136,432 |
| 3 | Drawing room-Cabin-Dome | St. Steel | 209,111 |
| 3 | Obs.-Dome-Coaches | St. Steel | 179,011 |
| 3 | Combine | St. Steel | 122,340 |
| 10 | Roomette-Bedroom | Steel | 108,716 |
| 6 | Bedroom-Obs. | Steel | 129,390 |
| 8 | Bedroom-Dup. Roomette | Steel | 114,837 |
| 4 | Bedroom-Dup. Roomette | Steel | 125,168 |
| 31 | Coach | Steel | 72,849 |
| 6 | Dining | Steel | 95,798 |
| 2 | Lunch-Lnge. | Steel | 75,631 |
| 2 | Dining-Lnge. | Steel | 75,642 |
| 8 | Parlor | Steel | 71,881 |
| 4 | Parlor-Obs. | Steel | 80,357 |
| 6 | Cafe-Parlor | Steel | 76,267 |
| 2 | Business car | Steel | 90,317 |
| 2 | Baggage-Dorm. | Steel | 59,369 |
| 17 | Mail-Exp. | Steel | 49,538 |
| 20 | Baggage | Steel | 39,021 |
| 2 | Postal | Steel | 43,462 |
| 23 | Coach | Steel | 67,641 |
| 5 | Sleeping | .... | 103,330 |
| 3 | Obs.-Lnge.-Sleep | ..... | 117,030 |
| 2 | Double bedroom | ..... | 93,760 |
| 3 | Coach | Steel | 104,533 |
| 1 | Dining-Lnge. | Steel | 124,940 |
| 50 | Double deck-motor | Alum. | 143,000 |
| 3 | Bag.-Mail | Steel | 60,500 |
| 1 | Bag.-Dorm. | Steel | 55,900 |
| 14 | Double bedroom | H. S. Steel | 108,000 |
| 40 | Sleeping | H. S. Steel | 110,000 |
| 16 | Double bedroom-Bar-Lnge. | H. S. Steel | 98,500 |
| 30 | Coach | Steel | 90,000 |
| 25 | Parlor | Steel | 89,200 |
| 20 | Bag.-Parlor-Lnge. | Steel | 102,500 |
| 5 | Parlor-Lnge. | Steel | 92,000 |
| 10 | Grill | Steel | 150,000 |
| 14 | Single bedroom | Steel | 148,000 |
| 3 | Double bedroom-Single bed. | Steel | 127,000 |
| 11 | Double bedroom-Duplex | Steel | 143,000 |
| 11 | Double bedroom-Buff.-Lnge. | Steel | 128,000 |
| 7 | Draw. rm.-double bed.-Bar-Lnge. | Steel | 132,000 |
| 3 | Compt.-Dble. bed.-Buff.-Lnge.-Obs. | Steel | 134,000 |
| 8 | M. U. | ..... | 134,656 |




A Fairbanks, Morse Diesel locomotive in service on the Milwaukee

Left — A lounge-kitchen car built by Pullman-Standard Car Manufacturing Company for the New York Central. Below — One of 11 coaches, the last of which were delivered early in 1948 to the Gulf Mobile & Ohio, by the American Car & Foundry Co.

# 517 PASSENGER-TRAIN CARS ORDERED

By FRED C. MILES
Associate Editor

Passenger-train cars ordered in 1948 for domestic use totaled 517, according to reports received by *Railway Age*. In addition, an order was placed by an industrial firm for one business car and an order for 22 coaches for export was received by a contract builder. Ten of the cars ordered for domestic service will be constructed in railroad shops.

An accompanying table lists the cars by purchaser.

**Passenger-Train Cars Ordered, 1920-1948**

| Year | Carbuilders' Shops: Passenger Carrying | Carbuilders' Shops: Non-Passenger Carrying | Carbuilders' Shops: For Pullman Company | Railroad Shops: Passenger Carrying | Railroad Shops: Non-Passenger Carrying | Total Domestic | U.S. Export |
|---|---|---|---|---|---|---|---|
| 1948 | 438 | 69 | 0 | 10 | 0 | 517 | 22 |
| 1947 | 128 | 12 | 0 | 138 | 39 | 317 | 63 |
| 1946 | 1,121 | 64 | 0 | 56 | 6 | 1,247 | 56 |
| 1945 | 2,690* | 213 | 0 | 90 | 0 | 2,993 | 49 |
| 1944 | 683* | 32 | 0 | 10 | 0 | 725 | 374 |
| 1943 | 1,670* | 0 | 0 | 0 | 15 | 1,685 | 0 |
| 1942 | 32* | 2 | 0 | 0 | 0 | 34 | 0 |
| 1941 | 206* | 115 | 197 | 31 | 0 | 549 | 27 |
| 1940 | 305 | 15 | 53 | 0 | 6 | 379 | 21 |
| 1939 | 175 | 21 | 125 | 0 | 0 | 321 | 28 |
| 1938 | 79 | 33 | 84 | 63 | 19 | 278 | 0 |
| 1937 | 181 | 145 | 171 | 39 | 31 | 567 | 0 |
| 1936 | 367 | 33 | 1 | 38 | 12 | 451 | 0 |
| 1935 | 48 | 69 | 10 | 6 | 0 | 133 | 0 |
| 1934 | 307 | 20 | 8 | 71 | 23 | 429 | 15 |
| 1933 | 13 | 1 | 3 | 2 | 0 | 19 | 0 |
| 1932 | 33 | 6 | 0 | 1 | 4 | 44 | 0 |
| 1931 | 10 | 21 | 1 | 3 | 2 | 37 | 21 |
| 1930 | 405 | 102 | 102 | 16 | 75 | 700 | 15 |
| 1929 | 767 | 677 | 550 | 26 | 363 | 2,383 | 108 |
| 1928 | 654 | 1,282 | 244 | 53 | 160 | 2,393 | 35 |
| 1927 | 993 | 471 | 118 | 84 | 27 | 1,693 | 47 |
| 1926 | 965 | 469 | 519 | 55 | 52 | 2,060 | 0 |
| 1925 | 1,002 | 699 | 479 | 20 | 74 | 2,274 | 68 |
| 1924 | 1,202 | 761 | 701 | 14 | 97 | 2,775 | 25 |
| 1923 | 762 | 930 | 424 | 18 | 98 | 2,232 | 5 |
| 1922 | 1,442 | 705 | 300 | 23 | 14 | 2,484 | 10 |
| 1921 | 125 | 11 | 100 | 1 | 50 | 287 | 145 |
| 1920 | 690 | 380 | 458 | 12 | 51 | 1,591 | 114 |

*Includes troop hospital, sleeping, and kitchen cars.
Source: 1948—*Railway Age;* all other—American Railway Car Institute.

**Passenger-Train Cars Delivered**

| Year | For Domestic Service | U.S. Export | Total |
|---|---|---|---|
| 1948 | 890 | 52 | 942 |
| 1947 | 670 | 26 | 696 |
| 1946 | 1,329 | 35 | 1,364 |
| 1945 | 928 | 0 | 928 |
| 1944 | 995 | 0 | 995 |
| 1943 | 681 | 21 | 702 |
| 1942 | 387 | 11 | 398 |
| 1941 | 349 | 14 | 363 |
| 1940 | 251 | 28 | 279 |
| 1939 | 276 | 0 | 276 |
| 1938 | 352 | 0 | 352 |
| 1937 | 557 | 0 | 557 |
| 1936 | 151 | 0 | 151 |
| 1935 | 200 | 0 | 200 |
| 1934 | 180 | 15 | 195 |
| 1933 | 7 | 0 | 7 |
| 1932 | 71 | 0 | 71 |
| 1931 | 269 | 21 | 290 |
| 1930 | 1,441 | 40 | 1,481 |
| 1929 | 2,074 | 128 | 2,202 |
| 1928 | 1,341 | 121 | 1,462 |
| 1927 | 1,933 | 42 | 1,975 |
| 1926 | 2,689 | 111 | 2,800 |
| 1925 | 2,341 | 42 | 2,383 |
| 1924 | 2,437 | 54 | 2,491 |
| 1923 | 1,918 | 45 | 1,963 |
| 1922 | 940 | 156 | 1,096 |
| 1921 | 1,110 | 49 | 1,159 |
| 1920 | 768 | 135 | 903 |

Source: American Railway Car Institute—1948 figures include an estimate for the last half of December.

Two other tables present summaries and analyses of passenger-train cars ordered and delivered each year from 1920 through 1948. The November 20, 1948 (Passenger Progress) issue of *Railway Age* contained detailed information about railroad plans for the use of new passenger-train equipment.

As in past Statistical Issues of *Railway Age,* the detailed list of passenger-train cars ordered was compiled from reports by the railroads which were checked and amplified with data received from the car builders through the cooperation and assistance of the American Railway Car Institute.

## PASSENGER-TRAIN CARS ORDERED—1948

### Domestic

| Purchaser | No. | Class | Length Ft. | Length In. | Construction | Seating Capacity | Weight Lb. | Date of Order | Expected Delivery Date | Builder |
|---|---|---|---|---|---|---|---|---|---|---|
| Atchison, Topeka & Santa Fe | 27 | Sleeping | 85 | 0 | St. Steel | 22 | 142,000 | January | 3rd qtr. '49 | Budd |
| | 15 | Sleeping | 85 | 0 | H. S. Steel | 22 | ..... | January | ..... | Amer. Car & Fdy. |
| | 13 | Sleeping | 85 | 0 | H. S. Steel | 20 | ..... | January | ..... | Amer. Car & Fdy. |
| | 1 | Observation | 85 | 0 | H. S. Steel | 30 | ..... | January | ..... | Amer. Car & Fdy. |
| | 14 | Baggage | 73 | 10 | H. S. Steel | .. | ..... | February | ..... | Amer. Car & Fdy. |
| | 4 | Bag.-Mail | 73 | 10 | H. S. Steel | .. | ..... | February | ..... | Amer. Car & Fdy. |
| | 24 | Chair | 82 | 10 | Alloy Steel | 44 | ..... | February | 1949 | Pullman-Standard |
| | 19 | Dining | 82 | 10 | Alloy Steel | .. | ..... | June | 1949 | Pullman-Standard |
| | 3 | Coach | 82 | 10 | Alloy Steel | 44 | ..... | June | 1949 | Pullman-Standard |
| | 1 | Lounge | 82 | 10 | Alloy Steel | .. | ..... | June | 1949 | Pullman-Standard |
| | 7 | Lnge.-Dorm. | 82 | 10 | Alloy Steel | .. | ..... | June | 1949 | Pullman-Standard |
| | 7 | Dorm.-Bag.-Chair | 82 | 10 | Alloy Steel | .. | ..... | June | 1949 | Pullman-Standard |
| Bangor & Aroostook | 3 | Coach | 82 | 10 | Alloy Steel | 62 | ..... | November | 1949 | Pullman-Standard |
| Dela., Lackawanna & Western | 10 | Coach | 82 | 5 | H. S. Steel | 62 | 130,000 | July | 3rd qtr. '49 | Pullman-Standard |
| | 10 | Coach | 82 | 5 | H. S. Steel | 62 | 130,000 | July | 3rd qtr. '50 | Amer. Car & Fdy. |
| Denver & Rio Grande Western | 4 | Sleeping | 85 | 0 | Steel | 22 | ..... | September | 3rd qtr. '49 | Pullman-Standard |
| | 2 | Combine | 85 | 0 | Steel | 32 | ..... | September | 3rd qtr. '49 | Pullman-Standard |
| | 3 | Baggage | 85 | 0 | Steel | .. | ..... | September | 3rd qtr. '49 | Pullman-Standard |
| | 3 | Bag.-Mail | 85 | 0 | Steel | .. | ..... | September | 3rd qtr. '49 | Pullman-Standard |
| | 11 | Coach | 85 | 0 | Steel | 52 | ..... | September | 3rd qtr. '49 | Pullman-Standard |
| | 2 | Din.-Kitch. | 85 | 0 | Steel | 44 | ..... | September | 3rd qtr. '49 | Pullman-Standard |
| | 3 | Tav.-Lnge. | 85 | 0 | Steel | 38 | ..... | September | 3rd qtr. '49 | Pullman-Standard |
| Erie | 30 | Bag.-Exp. | 71 | 5 | Steel | .. | 96,200 | May | 4th qtr. '49 | Amer. Car & Fdy. |
| Great Northern | 1 | Lnge.-Lunch-Dorm. | 82 | 10 | Alloy Steel | 38 | 137,100 | July | ..... | R. R. Shops |
| | 1 | Dining | 82 | 10 | Alloy Steel | 36 | 144,000 | July | ..... | R. R. Shops |
| | 11 | Sleeping | 82 | 10 | Alloy Steel | 24 | 137,000 | August | ..... | Pullman-Standard |
| | 1 | Obs.-Lnge. | 83 | 3½ | Alloy Steel | 34 | 125,000 | August | ..... | Pullman-Standard |
| | 12 | Coach | 82 | 10 | Alloy Steel | 48 | 121,500 | August | ..... | Pullman-Standard |
| | 6 | Coach | 82 | 10 | Alloy Steel | 60 | 122,000 | August | ..... | Pullman-Standard |
| Minnea., St. Paul & Sault S. Marie | 2 | Baggage | 70 | 0 | Steel | .. | 96,200 | November | 4th qtr. '49 | Amer. Car & Fdy. |
| Nashville, Chatt. & St. Louis | 8 | Coach | 81 | 10 | Steel | 56 | 167,200 | June | 1949 | R. R. Shops |
| New York Central | 1 | Sleeping | 82 | 10 | Alloy Steel | .. | ..... | January | 1949 | Pullman-Standard |
| | 30 | M. U. Coach | 85 | 6 | Steel | 130 | 146,000 | May | ..... | St. Louis Car |
| | 70 | M. U. Coach | 85 | 6 | Steel | 130 | 146,000 | September | ..... | St. Louis Car |
| Northern Pacific | 2 | Sleeping | 85 | 0 | H. S. Steel | .. | 134,000 | January | 1949 | Pullman-Standard |
| Southern Pacific | 5 | Coffee Shop | 85 | 0 | St. Steel | 46 | 131,700 | June | Apr-May '50 | Budd |
| | 6 | Lounge | 85 | 0 | St. Steel | 39 | 124,000 | June | Apr-May '50 | Budd |
| | 6 | Dining | 85 | 0 | St. Steel | 48 | 131,400 | June | Mar-Apr '50 | Budd |
| | 6 | Bag.-Mail | 85 | 0 | St. Steel | .. | 136,700 | June | Mar-Apr '50 | Budd |
| | 5 | Bag.-Dorm. | 85 | 0 | St. Steel | .. | 123,200 | June | March '50 | Budd |
| | 5 | Chair | 85 | 0 | St. Steel | 48 | 121,200 | June | March '50 | Budd |
| | 15 | Chair | 85 | 0 | St. Steel | 44 | 119,700 | June | 1949-50 | Budd |
| | 30 | Sleeping | 85 | 0 | St. Steel | 22 | 135,900 | June | 1949-50 | Budd |
| Union Pacific | 50 | Chair | 85 | 0 | Steel | 44 | ..... | February | 1949 | Pullman-Standard |
| | 50 | Sleeping | 85 | 0 | St. Steel | 22 | 137,000 | February | 1949 | Budd |
| Wabash | 6 | Sleeping | 85 | 0 | Steel-Alum. | .. | ..... | April | 4th qtr. '49 | Amer. Car & Fdy. |
| Wisconsin Central | 2 | Baggage | 73 | 7 | Steel | .. | ..... | October | ..... | Amer. Car & Fdy. |

### Other Orders—For Service in the United States

| Purchaser | No. | Class | Length Ft. | Length In. | Construction | Seating Capacity | Weight Lb. | Date of Order | Expected Delivery Date | Builder |
|---|---|---|---|---|---|---|---|---|---|---|
| United States Steel Co. | 1 | Business Car | .. | .. | ..... | .. | ..... | November | ..... | Pullman-Standard |

### For Export

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Manila Ry | 22 | Coach | 70 | | Alloy Steel | 153 | ..... | May | 1949 | Pullman-Standard |

### Canada

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Canadian National | 20 | Sleeping* | 85 | 5 | Steel | 24 | ..... | Dec. '47 | Oct. '49 | Can. Car & Fdy. |
| | 25 | Coach | 85 | 5 | Steel | 60 | ..... | November | Dec. '49 | Can. Car & Fdy. |
| | 50 | Exp.-Refrig. | 40 | 0 | Steel | .. | ..... | May | 2nd qtr. '49 | R. R. Shops |
| | 50 | Baggage | .. | .. | .... | .. | ..... | December | ..... | National Steel Car |
| Canadian Pacific | 10 | Mail-Express* | 81 | 0 | Steel | .. | 122,000 | Dec. '47 | Jan. '49 | Can. Car & Fdy. |
| | 15 | Bag.-Express* | 81 | 0 | Steel | .. | 117,000 | Dec. '47 | Jan. '49 | Can. Car & Fdy. |
| | 64 | Coach | 77 | 11½ | Steel | 68 | 115,000 | January | 1949 | R. R. Shops# |
| | 14 | Sleeping | 81 | 0 | Steel | 20 | 140,000 | January | 1949 | R. R. Shops† |

*Not listed last year.
#48 frames supplied by Canadian Car & Foundry Co. and 16 by National Steel Car Company.
†Frames supplied by National Steel Car Company.

# 93,691 FREIGHT-TRAIN CARS ORDERED LAST YEAR FOR DOMESTIC USE

By FRED C. MILES
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Orders for 93,970 freight-train cars, including 279 for export, were placed in this country last year, according to reports received by *Railway Age*. Of the 93,691 cars ordered for domestic use, 80,963 were ordered by the railroads and 12,728 were ordered by private car lines and industrial companies. Freight-train cars ordered by the railroads included 28,895 to be built in railroad shops, and orders placed by private car lines and industrial companies included 4,650 to be constructed in their own shops.

Freight-train cars delivered in 1948 totaled 113,770, including 1,570 for export. The 112,200 cars for domestic use included 29,100 built in railroad and private shops and 83,100 manufactured by contract builders. (The delivery figures include an estimate for the last half of December.) Freight cars for domestic use on order and undelivered on January 1 amounted to 103,896, including 39,088 ordered from company shops.

All cars ordered last year are listed in detail by individual purchaser in an accompanying table. Two additional tables summarize and analyze freight-train car orders and deliveries from 1920 through 1948.

The detailed list of orders, compiled from reports to *Railway Age* by the railroads, private car lines and industrial concerns, was checked and amplified with information received from the car builders through the cooperation and assistance of the American Railway Car Institute.

**Freight Cars Delivered — 1920-1948**

| Year | Railroad and Private Line Shops | Car-builders | Total | U. S. Export |
|---|---|---|---|---|
| 1948 | 29,100 | 83,100 | 112,200 | 1,570 |
| 1947 | 15,532 | 52,990 | 68,522 | 27,721 |
| 1946 | 10,070 | 31,885 | 41,955 | 18,020 |
| 1945 | 12,853 | 31,011 | 43,864 | 10,658 |
| 1944 | 15,050 | 27,953 | 43,003 | 38,759 |
| 1943 | 7,220 | 24,616 | 31,836 | 43,117 |
| 1942 | 15,444 | 47,429 | 62,873 | 8,529 |
| 1941 | 17,227 | 63,396 | 80,623 | 2,386 |
| 1940 | 17,025 | 45,316 | 62,341 | 1,734 |
| 1939 | 5,641 | 19,491 | 25,132 | 381 |
| 1938 | 6,480 | 9,990 | 16,470 | 611 |
| 1937 | 15,569 | 61,929 | 77,498 | 1,321 |
| 1936 | 15,643 | 30,969 | 46,612 | 523 |
| 1935 | 1,550 | 5,965 | 7,515 | 1,263 |
| 1934 | 8,965 | 16,211 | 25,176 | 91 |
| 1933 | 1,300 | 863 | 2,163 | 39 |
| 1932 | 2,770 | 482 | 3,252 | 84 |
| 1931 | 5,706 | 7,497 | 13,203 | 410 |
| 1930 | 9,839 | 65,081 | 74,920 | 1,731 |
| 1929 | 12,878 | 68,712 | 81,590 | 3,448 |
| 1928 | 7,685 | 38,375 | 46,060 | 1,453 |
| 1927 | 8,540 | 54,830 | 63,370 | 467 |
| 1926 | 9,964 | 78,898 | 88,862 | 2,445 |
| 1925 | 11,028 | 94,707 | 105,735 | 3,077 |
| 1924 | 9,618 | 104,093 | 113,711 | 1,584 |
| 1923 | 29,501 | 146,247 | 175,748 | 1,966 |
| 1922 | 2,423 | 63,866 | 66,289 | 1,399 |
| 1921 | 1,033 | 39,259 | 40,292 | 5,351 |
| 1920 | 14,171 | 46,784 | 60,955 | 14,602 |

Source: American Railway Car Institute. (The 1948 totals include an estimate for the last half of December.)

**Number and Classification of Freight Cars Ordered for Domestic Use**

| Year | Box | Flat | Stock | Gondola | Hopper | Tank | Refrig. | Others | Non-Rev. | Total |
|---|---|---|---|---|---|---|---|---|---|---|
| 1948 | 15,080 | 6,647 | 0 | 25,094 | 38,461 | 2,398 | 5,060 | 435 | 516 | 93,691 |
| 1947 | 38,490 | 636 | 150 | 14,877 | 52,036 | 8,015 | 6,200 | 586 | 337 | 121,327 |
| 1946 | 30,500 | 1,173 | 0 | 4,577 | 15,511 | 4,825 | 10,253 | 153 | 201 | 67,193 |
| 1945 | 15,440 | 1,241 | 0 | 5,727 | 12,960 | 915 | 1,085 | 174 | 320 | 37,862 |
| 1944 | 31,066 | 823 | 300 | 6,758 | 12,674 | 972 | 1,465 | 371 | 52 | 54,481 |
| 1943 | 10,027 | 2,212 | 0 | 5,312 | 18,400 | 556 | 50 | 153 | 320 | 37,030 |
| 1942 | 2,351 | 2,300 | 0 | 9,711 | 10,197 | 2,716 | 0 | 1,285 | 0 | 28,560 |
| 1941 | 55,939 | 3,459 | 400 | 15,814 | 23,213 | 2,800 | 2,370 | 1,614 | 1,288 | 106,897 |
| 1940 | 35,530 | 885 | 350 | 9,654 | 14,446 | 1,671 | 785 | 1,965 | 542 | 65,828 |
| 1939 | 20,140 | 976 | 100 | 6,419 | 21,923 | 2,373 | 675 | 1,127 | 182 | 53,915 |
| 1938 | 7,912 | 931 | 568 | 4,279 | 2,017 | 230 | 0 | 299 | 134 | 16,370 |
| 1937 | 20,564 | 1,365 | 500 | 10,120 | 12,817 | 692 | 1,770 | 287 | 1,827 | 49,942 |
| 1936 | 21,866 | 1,224 | 453 | 8,782 | 22,271 | 5,745 | 7,495 | 100 | 1,812 | 69,748 |
| 1935 | 8,925 | 75 | 50 | 2,755 | 5,970 | 313 | 600 | 32 | 29 | 18,749 |
| 1934 | 9,831 | 1,656 | 0 | 2,077 | 10,460 | 341 | 198 | 0 | 3 | 24,566 |
| 1933 | 619 | 50 | 0 | 4 | 33 | 269 | 615 | 129 | 1 | 1,720 |
| 1932 | 1,290 | 11 | 0 | 270 | 150 | 52 | 137 | 9 | 32 | 1,951 |
| 1931 | 2,100 | 400 | 750 | 1,072 | 3,113 | 261 | 2,314 | 28 | 159 | 10,197 |
| 1930 | 17,012 | 2,046 | 950 | 9,900 | 4,036 | 2,920 | 5,689 | 384 | 468 | 43,405 |
| 1929 | 57,139 | 3,888 | 2,950 | 18,289 | 16,117 | 4,446 | 3,583 | 789 | 2,940 | 110,141 |
| 1928 | 21,148 | 3,709 | 906 | 6,495 | 6,087 | 2,585 | 5,568 | 280 | 1,376 | 48,154 |
| 1927 | 28,975 | 2,694 | 1,668 | 13,735 | 11,835 | 5,930 | 4,432 | 1,067 | 2,655 | 72,991 |
| 1926 | 18,277 | 1,819 | 2,556 | 8,366 | 11,483 | 4,096 | 10,109 | 2,188 | 2,676 | 61,570 |
| 1925 | 40,668 | 2,720 | 2,749 | 21,869 | 6,448 | 4,701 | 5,308 | 802 | 1,320 | 86,585 |
| 1924 | 68,282 | 4,021 | 6,504 | 23,603 | 21,350 | 3,474 | 14,347 | 2,274 | 1,761 | 145,616 |
| 1923 | 35,286 | 2,904 | 714 | 16,318 | 23,883 | 6,003 | 6,207 | 2,448 | 1,846 | 95,609 |
| 1922 | 68,767 | 2,800 | 4,236 | 31,742 | 36,223 | 5,795 | 22,587 | 4,385 | 1,675 | 178,210 |
| 1921 | 5,130 | 292 | 630 | 5,427 | 4,708 | 327 | 4,905 | 1,048 | 298 | 22,765 |
| 1920 | 14,470 | 1,417 | 3,435 | 10,080 | 23,142 | 15,631 | 8,785 | 1,724 | 1,456 | 80,140 |

Source: 1948 — *Railway Age;* all other—American Railway Car Institute.

## Railroad Orders—For Service in the United States

| Purchaser | No. | Class | Capacity | Length Ft. | Length In. | Construction | Weight Lb. | Date of Order | Date of Delivery | Builder |
|---|---|---|---|---|---|---|---|---|---|---|
| Alaska | 20 | Caboose | ..... | .. | .. | ..... | ..... | 1948 | ..... | Pacific Car & Fdy |
| Aliquippa & Southern | 12 | Hot Bloom | ..... | 20 | 0 | Steel Frame | 31,700 | October | Jan. '49 | R. R. Shops |
| Ann Arbor | 60 | Cov. Hopper | 140,000 | 29 | 3 | Steel | ..... | November | Mar. '49 | Pullman-Standard |
| Atchison, Topeka & Santa Fe | 500 | Hopper | 140,000 | 40 | 8 | Steel | ..... | November | 1949 | Pullman-Standard |
| | 750 | Box | 100,000 | 40 | 6 | Steel | ..... | April | 1949 | R. R. Shops |
| | 250 | Refrig. | 80,000 | 40 | 6 | Steel | ..... | July | .... | R. R. Shops |
| | 250 | Cov. Hopper | 140,000 | 29 | 3 | Steel | ..... | September | Oct. '49 | R. R. Shops |
| | 50 | Gondola | 140,000 | 65 | 6 | Steel | ..... | September | 1949 | R. R. Shops |
| Atlantic Coast Line | 100 | Box | 100,000 | 40 | 6 1/16 | Steel | ..... | July | ..... | Amer. Car & Fdy. |
| | 50 | Hopper | 100,000 | 33 | 0 | Steel | ..... | July | ..... | Amer. Car & Fdy |
| | 100 | Pulpwood | 100,000 | 33 | 3/4 | Steel | ..... | July | ..... | Amer. Car & Fdy. |
| Bangor & Aroostook | 100 | Rack | 100,000 | 46 | 3/8 | Steel | 56,357 | July | Aug. '49 | Magor |
| Cambria & Indiana | 200 | Hopper | 100,000 | 33 | 0 | Steel | 41,500 | November | May-June '49 | Bethlehem |
| Carbon County | 300 | Hopper | 140,000 | 41 | 8 | Steel | 46,600 | March | Nov.-Dec. '48 | Pullman-Standard |
| Chesapeake & Ohio | 2,000 | Triple Hopper | 140,000 | 38 | 6 | Steel | 46,900 | April | Dec.'48-Mar.'49 | Amer. Car.& Fdy. |
| | 1,000 | Triple Hopper | 140,000 | 38 | 6 | Steel | 46,900 | August | 2nd qtr. '49 | Amer. Car& Fdy. |
| | 1,000 | Hopper | 140,000 | 40 | 8 | Steel | 48,500 | April | Feb.-April '49 | Bethlehem |
| Chicago & Illinois Midland | 400 | Gondola | 140,000 | 46 | 6 | Steel | 53,200 | April | 1948 | Pullman-Standard |
| Chicago, Indianapolis & Louisville | 30 | Box | 100,000 | 40 | 6 | ..... | ..... | December | ..... | Pullman-Standard |
| Chicago & North Western | 1,000 | S. S. Box | 100,000 | 40 | 6/16 | ..... | 44,600 | June | October | Pullman-Standard |
| | 502 | Hopper | 140,000 | 40 | 8 | Steel | 47,900 | June | Nov.-Dec. | Pullman-Standard |
| | 50 | Gondola | 140,000 | 65 | 6 | Steel | 59,100 | June | Feb. '49 | Pressed Steel |
| | 19 | Cov. Hopper | 140,000 | 29 | 3 | Steel | 51,200 | June | Feb. '49 | General American |
| | 500 | Gondola | 140,000 | 40 | 6 | ..... | 48,500 | August | Dec.'48-Jan.'49 | Bethlehem |
| | 42 | S. S. Box | 100,000 | 40 | 6 3/8 | ..... | 45,500 | September | November | Pullman-Standard |
| Chicago, Burlington & Quincy | 1,000 | Box | 100,000 | .. | .. | ..... | ..... | ..... | ..... | R. R. Shops |
| | 100 | Parts | 100,000 | .. | .. | ..... | ..... | ..... | ..... | R. R. Shops |
| | 150 | Cov. Hopper | 140,000 | .. | .. | ..... | ..... | ..... | ..... | R. R. Shops |
| | 500 | Hopper | 140,000 | .. | .. | Steel | ..... | ..... | ..... | R. R. Shops |
| | 300 | Flat | 100,000 | .. | .. | ..... | ..... | ..... | ..... | R. R. Shops |
| | 250 | Ballast | 140,000 | .. | .. | Steel | ..... | ..... | ..... | R. R. Shops |
| | 500 | Stock | 80,000 | .. | .. | ..... | ..... | ..... | ..... | R. R. Shops |
| | 50 | Gondola | 140,000 | .. | .. | ..... | ..... | ..... | ..... | R. R. Shops |
| | 200 | Tank | 16,000gals. | .. | .. | ..... | ..... | ..... | ..... | R. R. Shops |
| Chicago Great Western | 75 | Cov. Hopper | 140,000 | 29 | 3 | Steel | 50,100 | October | Mid-'49 | General American |
| Chicago, Milwaukee, St. Paul & Pacific | 200 | Flat | 80,000 | 40 | 0 | S. U. | ..... | April | 1948 | R. R. Shops |
| | 280 | Gondola | 100,000 | 41 | 6 | Steel | ..... | June | June-July 1949 | R. R. Shops |
| | 50 | Caboose | ..... | 35 | 3 1/2 | Steel | ..... | November | June '49 | R. R. Shops |
| | 2,300 | Gondola | 100,000 | 41 | 6 | Composite | ..... | November | 1949-50 | R. R. Shops |
| | 200 | Flat | 80,000 | 40 | 0 | S. U. | ..... | December | Begin 1st qtr. '49 | R. R. Shops |
| | 5 | Cov. Hopper | 140,000 | 29 | 3 | Steel | 51,800 | October | 1st qtr. '49 | General American |
| Chicago, Rock Island & Pacific | 1,000 | D. S. Box | 100,000 | 40 | 6 | Steel | 42,200 | February | October | Pullman-Standard |
| | 500 | Triple Hopper | 140,000 | 40 | 8 | Steel | 48,000 | February | April '49 | Amer. Car & Fdy. |
| | 100 | Cov. Hopper | 140,000 | 29 | 3 | Steel | 53,400 | November | May '49 | Pullman-Standard |
| | 1,000 | Gondola | 140,000 | 52 | 6 | Steel | 62,000 | November | June '49 | R. R. Shops |
| Chicago, St. Paul, Minneapolis & Omaha | 150 | Hopper | 140,000 | 40 | 8 | Steel | 47,900 | August | December | Pullman-Standard |
| | 150 | Gondola | 140,000 | 40 | 6 | Steel | 48,500 | August | Feb. '49 | Bethlehem |
| | 200 | S. S. Box | 100,000 | 40 | 6 3/8 | Steel | 45,500 | October | Dec. '49 | Pullman-Standard |
| Chicago South Shore & South Bend | 4 | Cov. Hopper | 140,000 | 29 | 3 | Steel | 45,000 | July | 2nd qtr. '49 | General American |
| Clinchfield | 5 | Caboose | ..... | 27 | 1 | Steel | 47,300 | January | 1948 | Int'l. Ry. Car |
| | 1,000 | Hopper | 100,000 | 33 | 0 | Steel | 39,600 | January | 1948-49 | Amer. Car & Fdy. |
| | 500 | Hopper | 100,000 | 33 | 0 | Steel | 39,600 | June | Mid-'49 | Amer. Car & Fdy. |
| | 35 | Cov. Hopper | 140,000 | 29 | 3 | Steel | 51,200 | June | Mid-'49 | Amer. Car & Fdy. |
| Copper Range | 8 | S. S. Box | 100,000 | 40 | 6 | Steel | 44,100 | June | November | Pullman-Standard |
| Cornwall | 30 | Ore | 150,000 | 19 | 10 | Steel | 43,600 | October | Mar. '49 | Bethlehem |
| Delaware & Hudson | 150 | Box | 80,000 | 40 | 6 | Steel | 39,600 | January | Nov'48-Mar.'49 | R.R. Shops |
| | 150 | Hopper | 100,000 | 29 | 0 | Steel | 34,600 | January | Nov.'48-Feb.'49 | R. R. Shops |
| | 20 | Air Dump | ..... | 29 | 6 | Steel | 59,600 | May | Mar. '49 | Magor |
| | 300 | Box | 100,000 | 40 | 6 | Steel | 45,800 | June | May '49-Mar.'50 | R. R. Shops |
| | 200 | Gondola | 100,000 | 41 | 10 | Steel | 42,700 | June | May'49-Sept.'49 | R. R. Shops |
| | 100 | Cov. Hopper | 140,000 | 29 | 3 | Steel | 50,500 | July | Feb. '49 | Greenville |
| Delaware, Lackawanna & Western | 300 | D.S. Box | 100,000 | 40 | 6 | Steel | 44,300 | July | 2nd qtr. '49 | Magor |
| | 200 | D.S. Box | 100,000 | 40 | 6 | Steel | 45,500 | July | December | Pullman-Standard |
| | 100 | Cov. Hopper | 100,000 | 26 | 4 | Steel | 49,500 | June | 2nd qtr. '49 | Amer. Car & Fdy. |
| | 500 | Hopper | 100,000 | 34 | 8 | Steel | 39,000 | July | 4th qtr. '49 | Amer. Car & Fdy. |
| Denver & Rio Grande Western | 25 | Cov. Hopper | 140,000 | 29 | 3 | Steel | 52,000 | October | 1st qtr. '49 | Pullman-Standard |
| | 200 | Gondola | 140,000 | 52 | 6 | Steel | 51,000 | November | 2nd qtr. '49 | Pullman-Standard |
| | 500 | Gondola | 100,000 | 42 | 9 | Steel | 48,000 | November | 2nd qtr. '49 | Pressed Steel |
| Detroit, Toledo & Ironton | 18 | Caboose | 60,000 | 30 | 0 | Steel | ..... | January | 1948 | Int'l. Ry. Car |
| | 10 | Air Dump | 100,000 | 29 | 6 | Steel | 59,600 | January | May '49 | Magor |
| Duluth, Missabe & Iron Range | 1,000 | Ore | 140,000 | 19 | 10 | Steel | 44,200 | February | 1948-49 | Pullman-Standard |
| | 500 | Ore | 140,000 | 19 | 10 | Steel | 43,500 | February | 2nd qtr. '49 | General American |
| Duluth, South Shore & Atlantic | 100 | S.S. Box | 100,000 | 40 | 6 | Steel | 44,400 | August | November | Pullman-Standard |
| | 100 | Gondola | 100,000 | 42 | 0 | Steel | ..... | August | 3rd qtr. '49 | Pullman-Standard |
| Erie | 5 | Flat | 250,000 | 53 | 0 | Steel | 105,400 | April | 1948 | R. R. Shops |
| | 6 | Flat | 250,000 | 57 | 9 | Steel | 126,300 | April | July | R. R. Shops |
| Escanaba & Lake Superior | 5 | Hopper | 100,000 | 33 | 0 | Steel | 43,800 | October | April '49 | Pullman-Standard |
| | 5 | Gondola | 100,000 | 42 | 0 | Steel | 45,000 | October | April '49 | Pullman-Standard |
| Grand Trunk Western | 200 | S.S. Box | 100,000 | 50 | 6 | S.F. | 50,200 | 1948 | 1949 | Pullman-Standard |
| | 500 | S.S. Box | 80,000 | 40 | 6 | S.F. | 38,000 | 1948 | 1949 | Amer. Car & Fdy. |

| Purchaser | No. | Class | Capacity | Length Ft. | Length In. | Construction | Weight Lb. | Date of Order | Date of Delivery | Builder |
|---|---|---|---|---|---|---|---|---|---|---|
| Great Northern | 18 | Caboose | ..... | 30 | 0 | Steel | 57,000 | 1948 | 1949 | R. R. Shops |
| | 1,400 | D.S. Box | 100,000 | 40 | 6 | Alloy Steel | 41,000 | September | Mar. '49 | R. R. Shops |
| | 100 | D.S. Box | 100,000 | 40 | 6 | Aluminum | ..... | September | Mar. '49 | R. R. Shops |
| | 500 | Gondola | 100,000 | 40 | 6 | Alloy Steel | 42,100 | October | July '49 | Pullman-Standard |
| | 100 | Cov. Hopper | 140,000 | 29 | 3 | Alloy Steel | 51,000 | October | Mar. '49 | Pullman-Standard |
| Green Bay & Western | 10 | Hopper | 100,000 | 33 | 0 | Steel | 45,500 | September | April '49 | Pullman-Standard |
| Gulf Coast Lines | 500 | Gondola | 140,000 | 52 | 6 | Steel | 58,000 | April | Mar. '49 | R. R. Shops |
| | 80 | Hopper | 140,000 | 40 | 8 | Steel | 49,000 | April | Aug. '49 | R. R. Shops |
| Gulf, Mobile & Ohio | 500 | Gondola | 100,000 | 41 | 3 | Steel | ..... | June | 3rd qtr '49 | Amer. Car & Fdy. |
| Illinois Central | 25 | Gondola* | 140,000 | 65 | 6 | Steel Frame | 58,100 | Dec. '47 | October | Pressed Steel |
| | 5 | Cov. Hopper* | 140,000 | 29 | 3 | Steel Frame | 52,000 | Dec. '47 | Dec. '47 | Amer. Car & Fdy. |
| | 1,000 | Hopper | 100,000 | 33 | 0 | Steel Frame | 43,000 | January | 1948-49 | Pullman-Standard |
| | 1,000 | Hopper | 100,000 | 33 | 0 | Steel Frame | 43,800 | January | Feb. '49 | General American |
| | 16 | Dump | ..... | 24 | 3 | Steel Frame | 50,000 | June | 1949 | Austin-Western |
| | 1,750 | Hopper | 100,000 | 33 | 0 | Steel Frame | 43,800 | July | 1st qtr. '49 | Pullman-Standard |
| | 500 | Hopper | 100,000 | 33 | 0 | Steel Frame | 43,800 | July | 1st qtr. '49 | Pressed Steel |
| | 750 | Hopper | 100,000 | 33 | 0 | Steel Frame | 43,800 | July | April '49 | General American |
| | 100 | Cov. Hopper | 140,000 | 29 | 3 | Steel Frame | 52,000 | July | June '49 | General American |
| | 1,500 | Hopper | 100,000 | 33 | 0 | Steel Frame | 42,000 | July | May-Nov. '49 | R. R. Shops |
| | 375 | Flat | 100,000 | 53 | 6 | Steel Frame | 50,600 | July | Dec. '49 | R. R. Shops |
| Illinois Terminal | 150 | Box | 100,000 | 40 | 6 | Steel | ..... | January | ..... | Amer. Car & Fdy. |
| International-Great Northern | 500 | Gondola | 140,000 | 52 | 6 | Steel | 58,000 | April | Jan. '49 | R. R. Shops |
| | 80 | Hopper | 140,000 | 40 | 8 | Steel | 49,000 | April | July '49 | R. R. Shops |
| Kewaunee, Green Bay & Western | 10 | Hopper | 100,000 | 33 | 0 | Steel | 45,000 | September | April '49 | Pullman-Standard |
| Louisiana & Arkansas | 100 | Cov. Hopper | 140,000 | 40 | 2 | Steel | 63,100 | January | Mar. '49 | General American |
| | 400 | Hopper | 140,000 | 40 | 8 | Steel | 49,300 | June | Jan. '49 | Pullman-Standard |
| Louisville & Nashville | 4,000 | Hopper | 100,000 | 33 | 0 | Steel | 40,400 | April | Beg. Dec. | Pullman-Standard |
| | 200 | Gondola | 140,000 | 65 | 6 | Steel | 59,000 | April | Beg. Dec. | Pressed Steel |
| Minneapolis & St. Louis | 20 | Caboose | 60,000 | 25 | 0 | S. U. | 40,000 | October | 1948-49 | R. R. Shops |
| Minneapolis, St. Paul & Sault Ste. Marie | 200 | Gondola | 100,000 | 41 | 0 | Steel | 49,000 | April | 1st qtr. '49 | R. R. Shops |
| | 500 | Box | 100,000 | 40 | 6 | Steel | 46,000 | June | Mid- '49 | R. R. Shops |
| | 50 | Box | 100,000 | 50 | 6 | Steel | 50,000 | June | Mid- '49 | R. R. Shops |
| | 35 | Hopper | 140,000 | 29 | 3 | Steel | 52,300 | November | 2nd qtr. '49 | General American |
| Mississippi Central | 100 | Box | 100,000 | 40 | 6 | Steel | 45,500 | October | April '49 | Pullman-Standard |
| Missouri-Kansas-Texas | 500 | Triple Hopper | 140,000 | 42 | 8 | Steel | 45,000 | October | April '49 | Pressed Steel |
| | 25 | Caboose | ..... | 29 | 9 | Steel | 48,000 | October | April '49 | R. R. Shops |
| Missouri Pacific | 840 | Hopper | 140,000 | 40 | 8 | Steel | 49,000 | April | 1949 | R. R. Shops |
| | 1,000 | Hopper | 140,000 | 40 | 8 | Steel | 49,000 | June | 1949 | Bethlehem |
| Monongahela Connecting | 100 | Gondola | 140,000 | 40 | 0 | Steel Frame | 57,000 | February | April '49 | Amer. Car & Fdy. |
| | 120 | Gondola | 140,000 | 40 | 9 | Steel Frame | 57,000 | August | Aug. '49 | Amer. Car & Fdy. |
| | 200 | Gondola | 140,000 | 40 | 0 | Steel Frame | 52,000 | November | Apr. '49 | Greenville |
| Nashville, Chattanooga & St. Louis | 25 | Gondola | 140,000 | 65 | 6 | Steel | 59,000 | May | Jan. '49 | Pressed Steel |
| | 500 | Hopper | 100,000 | 33 | 0 | Steel | 40,000 | June | Mar. '49 | Pullman-Standard |
| | 500 | Gondola | 100,000 | 42 | 0 | Steel | 41,300 | June | May '49 | Pullman-Standard |
| New York Central | 1,000 | Box | 110,000 | 40 | 6 | Steel Frame | 46,500 | February | ..... | Despatch Shops |
| | 1,000 | Hopper | 110,000 | 31 | 6 | Steel Frame | 40,000 | February | ..... | Despatch Shops |
| | 500 | Gondola | 140,000 | 52 | 6 | Steel Frame | 61,000 | February | ..... | Despatch Shops |
| | 3 | Transformer | 250,000 | 58 | 4 | Cast Steel | 130,500 | June | ..... | Despatch Shops |
| | 2,000 | Hopper | 110,000 | .. | .. | ..... | ..... | December | Mid- '49 | Despatch Shops |
| | 500 | Hopper | 110,000 | .. | .. | ..... | ..... | December | Mid- '49 | Amer. Car & Fdy. |
| | 650 | Hopper | 110,000 | .. | .. | ..... | ..... | December | Mid- '49 | Pressed Steel |
| | 400 | Gondola | 140,000 | .. | .. | ..... | ..... | December | Mid- '49 | Bethlehem |
| | 600 | Gondola | 140,000 | .. | .. | ..... | ..... | December | Mid- '49 | Greenville |
| | 500 | Gondola | 140,000 | .. | .. | ..... | ..... | December | Mid- '49 | Pullman-Standard |
| | 500 | Flat | 140,000 | .. | .. | Steel | ..... | December | Mid- '49 | General American |
| | 200 | Cov. Hopper | 140,000 | .. | .. | ..... | ..... | December | Mid- '49 | Pullman-Standard |
| New York, Chicago & St. Louis | 62 | Cov. Hopper* | 140,000 | 29 | 3 | Steel | 52,000 | Nov. '47 | Jan. '49 | Ralston |
| | 400 | Gondola* | 140,000 | 52 | 6 | Steel | 63,500 | Dec. '47 | Jan. '49 | Amer. Car & Fdy. |
| New York, New Haven & Hartford | 15 | Cov. Hopper | 140,000 | 29 | 3 | Steel | 52,700 | October | Mar. '49 | Pullman-Standard |
| New York, Susquehanna & Western | 10 | Caboose | ..... | 27 | 1 | Steel Frame | 46,000 | January | Sept.-Dec. '48 | Int'l Ry. Car |
| Norfolk & Western | 1,000 | Hopper | 140,000 | 36 | 9 | Steel | 50,300 | February | Oct.'49-Feb.'50 | R. R. Shops |
| | 100 | Cov. Hopper | 140,000 | 38 | 0 | Steel | 55,900 | March | Jan. '49 | Greenville |
| | 1,000 | Hopper | 140,000 | 36 | 9 | Steel | 50,300 | May | 1st half '49 | Virginia Bridge |
| | 10 | Caboose | ..... | 24 | 1 | Steel | 55,000 | May | April '49 | St. Louis Car |
| Northern Pacific | 250 | Gondola | 100,000 | 41 | 6 | Steel | 50,100 | October | 1949 | R. R. Shops |
| | 200 | Ore | 150,000 | 19 | 10 | Steel | 42,500 | October | 1949 | R. R. Shops |
| | 250 | Refrig. | 80,000 | 33 | 2 | Steel | 54,100 | November | 1949 | Pacific Car & Fdy. |
| Pennsylvania | 300 | Cov. Hopper | 140,000 | 44 | 0 | Steel | 52,600 | January | October | R. R. Shops |
| | 1,400 | Gondola | 140,000 | 52 | 6 | Steel | 54,600 | January | Mar. '49 | R. R. Shops |
| | 100 | Gondola | 140,000 | 46 | 0 | Steel | 51,000 | January | Mar. '49 | R. R. Shops |
| | 500 | Gondola | 140,000 | 65 | 6 | Steel | 62,000 | January | May '49 | R. R. Shops |
| | 1,500 | Gondola | 140,000 | 52 | 6 | Steel | 54,600 | October | Oct. '49 | R. R. Shops |
| | 500 | Gondola | 140,000 | 46 | 0 | Steel | 51,000 | October | Jan. '50 | R. R. Shops |
| | 200 | Caboose | ..... | 35 | 11 | ..... | 50,000 | October | May '50 | R. R. Shops |
| Pittsburgh & Lake Erie | 1,000 | Box | 110,000 | 40 | 6 | Steel Frame | 46,500 | February | ..... | Despatch Shops |
| | 1,000 | Gondola | 110,000 | 31 | 6 | Steel Frame | 40,000 | February | ..... | Despatch Shops |
| | 500 | Gondola | 140,000 | 52 | 6 | Steel Frame | 61,000 | February | ..... | Despatch Shops |
| Pittsburgh & West Virginia | 300 | Gondola | 100,000 | 41 | 0 | Steel | 41,600 | July | 1948 | Bethlehem |
| | 600 | Hopper | 120,000 | 33 | ⅛ | Steel | 43,200 | August | 1949 | Pressed Steel |
| | 100 | Box | 100,000 | 40 | 6 | Steel | 41,800 | August | November | Pullman-Standard |
| Reading | 1,000 | Hopper* | 100,000 | 33 | 0 | Steel | 38,900 | Dec. '47 | October | Bethlehem |
| | 750 | Hopper | ..... | .. | .. | ..... | ..... | December | ..... | Bethlehem |
| St. Louis-San Francisco | 20 | Caboose | ..... | 29 | 2 | Steel Frame | 44,300 | April | Feb. '49 | R. R. Shops |
| | 50 | Gondola | 140,000 | 65 | 0 | Steel | 59,600 | May | December | Pressed Steel |
| | 130 | Tank | 10,000 gals. | | .. | Steel | 44,300 | May | Aug. '49 | Amer. Car & Fdy. |
| | 800 | Hopper | 110,000 | 33 | 0 | Steel | 40,500 | August | June '49 | Pullman-Standard |
| | 400 | Gondola | 140,000 | 52 | 6 | Steel | 56,600 | September | Mar. '49 | Pullman-Standard |
| St. Louis Southwestern | 50 | Cov. Hopper | 140,000 | 29 | 3 | Steel | 52,700 | April | Oct. '49 | Amer. Car & Fdy. |
| Seaboard Air Line | 500 | Box | 100,000 | 40 | 6 | Steel | 45,000 | January | October | Pullman-Standard |
| | 50 | Gondola | 140,000 | 65 | 6 | Steel | ..... | June | December | Pressed Steel |
| | 200 | Cement | 140,000 | 29 | 3 | Steel | 52,960 | June | Mar. '49 | Greenville |
| | 150 | Hopper | 140,000 | 40 | 8 | Steel | 46,000 | July | Jan. '49 | Pullman-Standard |
| | 100 | Phosphate | 140,000 | 34 | 9 | Steel | 51,500 | July | Jan. '49 | Pullman-Standard |
| Southern | 150 | Gondola | 140,000 | 65 | 6 | Steel | ..... | June | Jan. '49 | Pressed Steel |
| | 50 | Box | 100,000 | 40 | 6 | Steel | ..... | November | December | Pullman-Standard |

| Purchaser | No. | Class | Capacity | Length Ft. | Length In. | Construction | Weight Lb. | Date of Order | Date of Delivery | Builder |
|---|---|---|---|---|---|---|---|---|---|---|
| Southern Pacific | 350 | Cov. Hopper | 140,000 | 29 | 3 | Steel | 53,300 | February | Beg. Sept. '49 | Amer. Car & Fdy. |
| | 1,000 | Gondola | 100,000 | 41 | 0 | Composite | 50,000 | March | 3rd qtr. '49 | General American |
| | 1,650 | Gondola | 100,000 | 41 | 0 | Steel | 50,100 | March | 1948-49 | Bethlehem |
| | 700 | Gondola | 100,000 | 41 | 0 | Composite | 42,700 | March | Beg. July '49 | Amer. Car & Fdy. |
| | 2,050 | Flat | 140,000 | 53 | 6 | Steel | 57,500 | March | Beg. Oct. '49 | Amer. Car & Fdy. |
| | 600 | Flat | 100,000 | 40 | 10 | Steel | 49,000 | March | Beg. Sept. '49 | Amer. Car & Fdy. |
| | 3,350 | Box | 100,000 | 40 | 6 | Steel | 44,100 | March | 1948-49 | Pullman-Standard |
| | 80 | Caboose | 80,000 | 32 | 0 | Steel | 44,100 | March | 1949 | S. P. Equip. Co. |
| Spokane, Portland & Seattle | 500 | Box | 100,000 | 40 | 6 | Steel | 45,700 | January | November | N. P. Ry. |
| | 500 | Box | 100,000 | 40 | 6 | Steel | 45,700 | July | Mar. '49 | G. N. Ry. |
| | 100 | Gondola | 100,000 | 40 | 6 | Steel | ..... | October | 1949 | Pullman-Standard |
| Terminal R.R. Assn. of St. Louis | 4 | Caboose | ..... | 27 | 8 | Steel | 36,000 | Cctober | Jan. '49 | Int'l Ry. Car |
| Virginian | 25 | Caboose | 60,000 | 21 | 1 | Steel | 50,000 | June | April '49 | St. Louis Car |
| | 1,000 | Hopper | 110,000 | 33 | 0 | Steel | 42,000 | August | May '49 | Pressed Steel |
| | 500 | Hopper | 110,000 | .. | .. | ..... | ..... | August | 1st qtr. '49 | R. R. Shops |
| Wabash | 500 | Box* | 100,000 | 40 | 6 | Steel | ..... | April '47 | 1948 | Amer. Car & Fdy. |
| | 150 | Auto* | 100,000 | 50 | 6 | Steel | ..... | Dec. '47 | 1948 | Pressed Steel |
| | 200 | Hopper* | 100,000 | 30 | 6 | Steel | ..... | Dec. '47 | 1st qtr. '49 | R. R. Shops |
| | 20 | Caboose* | ..... | 28 | 5 | Steel | ..... | Dec. '47 | 1st qtr. '49 | R. R. Shops |
| | 600 | Box | 100,000 | 40 | 6 | Steel | ..... | June | 1949 | R. R. Shops |
| | 60 | Cov. Hopper | 140,000 | 29 | 3 | Steel | ..... | October | 1949 | Pullman-Standard |
| Western Maryland | 1,000 | Hopper | 110,000 | 33 | 0 | Steel | 41,300 | May | Feb, '49 | Bethlehem |
| | 50 | Gondola | 140,000 | 65 | 6 | Steel | 65,000 | May | Jan. '49 | Pressed Steel |
| | 200 | Gondola | 100,000 | 52 | 6 | Steel | 51,000 | June | December | Greenville |
| | 200 | Box | 100,000 | 40 | 6 | Steel | 47,845 | June | December | Pressed Steel |
| | 50 | Box | 100,000 | 50 | 6 | Steel | 58,000 | July | 1st qtr. '49 | Greenville |
| Western Pacific | 50 | Gondola | 140,000 | 65 | 6 | Steel | ..... | November | 1949 | Greenville |
| | 200 | Gondola | 140,000 | 52 | 6 | Steel | ..... | November | 1949 | Greenville |
| Wheeling & Lake Erie | 500 | Gondola | 140,000 | 52 | 6 | Steel | 63,000 | January | 1st qtr. '49 | Amer. Car & Fdy. |
| | 1 | Caboose | ..... | 27 | 1 | Steel | 43,800 | ..... | June | R. R. Shops |
| | 10 | Caboose | ..... | 27 | 1 | Steel | 43,800 | July | Nov.'48-Apr.'49 | R. R. Shops |
| | 500 | Gondola | 100,000 | 41 | 6 | Steel | 41,000 | February | Oct.-Nov. | Bethlehem |

*Not listed last year.

## Private Car Lines and Other Orders—For Service in the United States

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Alabama Power Co. | 5 | Hopper | 100,000 | 33 | 0 | Steel | ..... | April | 1949 | Pullman-Standard |
| | 5 | Hopper | 100,000 | 33 | 0 | Steel | ..... | August | 1949 | Pullman-Standard |
| American Rolling Mill Co. | 1 | Air Dump | 100,000 | 29 | 6 | Steel | 59,600 | January | May '49 | Magor |
| Ansul Chemical Co. | 1 | Tank | 40,000 | .. | .. | ..... | ..... | August | Oct. '49 | General American |
| | 2 | Tank | 60,000 | .. | .. | ..... | ..... | August | Oct. '49 | General American |
| | 3 | Tank | 11,200 gals. | .. | .. | ..... | ..... | August | Oct. '49 | General American |
| Atlantic Steel Co. | 1 | Air Dump | 140,000 | 29 | 6 | Steel | 66,800 | June | May '49 | Magor |
| Atlas Powder Co. | 1 | Tank | 100,000 | 34 | 1 | Steel | 43,500 | November | ..... | Amer. Car & Fdy. |
| Atomic Energy Commission | 10 | Special Box | 100,000 | 50 | 6 | Steel | 58,800 | April | August | Pressed Steel |
| Bethlehem Steel Co. | 60 | Slab | 150,000 | 36 | 0 | Steel | 62,000 | March | December | Bethlehem |
| | 30 | Gondola | 140,000 | 46 | 4 | Steel | 54,300 | November | Mar. '49 | Bethlehem |
| | 8 | Tank | 140,000 | 35 | 2 | Steel | 52,000 | October | ..... | Amer. Car & Fdy. |
| | 3 | Tank | 10,000 gals. | .. | .. | ..... | ..... | October | Oct. '49 | General American |
| Birmingham Slag Co. | 10 | Hopper | 100,000 | 33 | 0 | Steel | ..... | June | 1949 | Pullman-Standard |
| Buckeye Steel Castings Co. | 8 | Gondola | 100,000 | 40 | 6 | Steel | ..... | November | 1949 | Pullman-Standard |
| Buffalo Electro-Chemical Co. | 2 | Tank | 6,000 gals. | .. | .. | ..... | ..... | March | October | General American |
| | 1 | Tank | 80,000 | .. | .. | ..... | ..... | August | ..... | General American |
| Godfrey L. Cabot, Inc. | 20 | Cov. Hopper | 100,000 | 45 | 10 | Steel | ..... | April | ..... | Amer. Car & Fdy. |
| California Dispatch Line | 20 | Tank | 100,000 | 35 | 2 | Steel | 64,000 | April | ..... | Amer. Car & Fdy. |
| Chemical Construction Corp. | 2 | Tank | 11,200 gals. | .. | .. | ..... | ..... | September | Oct. '49 | General American |
| | 10 | Tank | 7,000 gals. | .. | .. | ..... | ..... | September | Oct. '49 | General American |
| Cities Fuel Corp. | 5 | Tank | 100,000 | 39 | 10 | Steel | 70,000 | August | ..... | Amer. Car & Fdy. |
| Cities Oil Service Corp. | 125 | Tank | 10,500 gals. | .. | .. | ..... | ..... | February | June '49 | General American |
| Consolidated Chemical Industries | 4 | Tank | ..... | 27 | 9 | Steel | ..... | October | ..... | Amer. Car & Fdy. |
| | 1 | Tank | ..... | .. | .. | ..... | ..... | September | ..... | General American |
| Crossett Chemical Co. | 1 | Tank | 8,000 gals. | .. | .. | ..... | ..... | December | Oct. '49 | General American |
| Cudahy Car Lines | 150 | Refrig. | 80,000 | 35 | 5 | S. U. | 56,000 | July | 1949 | Company Shops |
| Cumberland Gas Corp. | 5 | Tank | 100,000 | 35 | 2 | Steel | 67,300 | May | ..... | Amer. Car & Fdy. |
| Detroit Edison Co. | 5 | Hopper | 140,000 | 40 | 8 | Steel | 48,100 | March | November | Greenville |
| Dow Chemical Co. | 6 | Tank | 8,000 gals. | .. | .. | ..... | ..... | February | November | General American |
| | 1 | Tank | 100,000 | .. | .. | ..... | ..... | March | November | General American |
| E. I. du Pont de Nemours | 3 | Tank | 80,000 | 30 | 11 | Aluminum | 41,500 | August | ..... | Amer. Car & Fdy. |
| Ford Motor Co. | 40 | Air Dump | 140,000 | 29 | 6 | Steel | 66,800 | June | Mar. '49 | Magor |
| Fruit Growers Express | 300 | Refrig. | ..... | .. | .. | ..... | ..... | 1948 | ..... | Pacific Car & Fdy. |
| General Chemical Co. | 40 | Tank | 80,000 | .. | .. | ..... | ..... | September | ..... | General American |
| | 1 | Tank | ..... | .. | .. | ..... | ..... | September | ..... | General American |
| General Electric Co. | 16 | Cov. Hopper | 140,000 | 29 | 3 | Steel | 51,800 | May | 1st qtr. '49 | General American |
| Great Lakes Steel Corp. | 18 | Hopper | 140,000 | 42 | 8 | Steel | 45,100 | June | 1949 | Pressed Steel |
| | 6 | Gondola | 140,000 | .. | .. | Steel | 45,100 | May | September | Pressed Steel |
| Houston Lighting & Power Co. | 1 | Flat | 250,000 | 56 | 0 | Steel | 132,200 | October | Mar. '49 | Greenville |
| Inland Steel Co. | 50 | Gondola | 140,000 | 41 | 10 | Steel | ..... | September | 1949 | Pullman-Standard |
| | 30 | Mill | 180,000 | 40 | 0 | Steel | 67,200 | February | 1st qtr. '49 | General American |
| International Cementers, Inc. | 10 | Cov. Hopper | 140,000 | 29 | 3 | Steel | ..... | August | ..... | Amer. Car & Fdy. |
| Jackson Iron & Steel Co. | 2 | Triple Hopper | 140,000 | 29 | 0 | Steel | 51,700 | March | November | Ralston |
| Jones & Laughlin Steel Corp. | 60 | Special Flat | 200,000 | 40 | 0 | Steel | 57,900 | June | Dec. '49 | Greenville |
| Lion Oil Co. | 16 | Tank | 10,000 gals. | .. | .. | ..... | ..... | April | 1948-49 | General American |
| | 31 | Tank | 8,000 gals. | .. | .. | ..... | ..... | April | Mid-'49 | General American |
| Mather Stock Car Co. | 100 | Refrig. | 80,000 | .. | .. | ..... | ..... | ..... | 1949 | Co. Shops |
| Matthiessen & Hegler Zinc Co. | 3 | Tank | 10,000 gals. | .. | .. | ..... | ..... | March | July '49 | General American |
| Merchants Despatch Transportation Corp. | 60 | Refrig. | 90,000 | 27 | 8 | Steel | 75,000 | November | May '49 | Despatch Shops |
| | 500 | Refrig. | 70,000 | 33 | 2 | Steel | 58,600 | February | December | Despatch Shops |

| Purchaser | No. | Class | Capacity | Length Ft. | Length In. | Construction | Weight Lb. | Date of Order | Date of Delivery | Builder |
|---|---|---|---|---|---|---|---|---|---|---|
| Modern Gas & Appliances Co. | 5 | Tank | 100,000 | 39 | 10 | Steel | 69,980 | May | ..... | Amer. Car & Fdy. |
| Monsanto Chemical Co. | 2 | Tank | 100,000 | 33 | 6 | Steel | 52,000 | January | ..... | Amer. Car & Fdy. |
| | 2 | Tank | 8,000 gals. | .. | | ..... | ..... | April | July '49 | General American |
| New Jersey Zinc Co. | 6 | Tank | 100,000 | .. | .. | ..... | ..... | September | ..... | General American |
| New York Power & Light Corp. | 2 | Air Dump | 100,000 | 29 | 6 | Steel | 59,600 | April | May '49 | Magor |
| Northern Refrigerator Line | 250 | Refrig. | 70,000 | 33 | 2 | Steel | 58,600 | February | November | Despatch Shops |
| Pacific Fruit Express | 3,000 | Refrig. | 80,000 | 33 | 2 | Steel Frame | 56,000 | August | 1949 | S. P. Equip. Co. |
| E. E. Paxton Butane Co. | 2 | Tank | 10,500 gals. | .. | | ..... | ..... | February | July '49 | General American |
| Pennsylvania Salt Mfg. Co. | 4 | M. U. Tank | 80,000 | .. | .. | Steel | 33,500 | March | ..... | Amer. Car & Fdy. |
| | 5 | Tank | 100,000 | 29 | 7 | Steel | 40,500 | July | ..... | Amer. Car & Fdy. |
| Pittsburgh Steel Co. | 30 | Air Dump | 100,000 | 29 | 6 | Steel | 59,600 | February | May '49 | Magor |
| St. Louis Refrigerator Car Co. | 100 | Refrig. | 80,000 | 40 | 0 | Steel | 55,000 | September | 2nd half '49 | Company Shops |
| Shippers Car Line Corp. | 35 | Cov. Hopper | 140,000 | 35 | 9¾ | Steel | ..... | January | ..... | Amer. Car & Fdy. |
| | 95 | Tank | 100,000 | 38 | 10¼ | Steel | 68,150 | February | ..... | Amer. Car & Fdy. |
| | 10 | S. M. U. Tank | 80,000 | .. | .. | Steel | 33,500 | February | ..... | Amer. Car & Fdy. |
| | 142 | Tank | 100,000 | 35 | 2 | Steel | 69,800 | February | ..... | Amer. Car & Fdy. |
| | 100 | Tank | 100,000 | 33 | 8 | Steel | 44,340 | February | ..... | Amer. Car & Fdy. |
| | 11 | Tank | 100,000 | 35 | 2 | Steel | 66,000 | February | ..... | Amer. Car & Fdy. |
| | 30 | Tank | 100,000 | 35 | 2 | Steel | 68,000 | March | ..... | Amer. Car & Fdy. |
| | 20 | Cov. Hopper | 100,000 | 45 | 10½ | Steel | ..... | April | ..... | Amer. Car & Fdy. |
| | 99 | Tank | 100,000 | 34 | 1¾ | Steel | 58,000 | May | ..... | Amer. Car & Fdy. |
| | 50 | Box | 140,000 | 40 | 7 | Steel | ..... | July | ..... | Amer. Car & Fdy. |
| Thos. E. Snyder Sons Co. | 3 | Tank | 6,000 gals. | .. | | ..... | ..... | June | Aug. '49 | General American |
| | 12 | Tank | 8,000 gals. | .. | | ..... | ..... | June | Aug. '49 | General American |
| Southern Indiana Liquefied Gas Corp. | 4 | Tank | 100,000 | 35 | 2 | Steel | 66,000 | February | ..... | Amer. Car & Fdy. |
| Southern Pacific Equipment Co. | 1,650 | Gondola | 100,000 | 41 | 0 | Steel | 49,500 | March | 1948-49 | Bethlehem |
| | 350 | Cov. Hopper | 140,000 | 29 | 3 | Steel | ..... | March | ..... | Amer. Car & Fdy. |
| | 2,050 | Flat | 140,000 | 53 | 6 | S. U. | ..... | March | ..... | Amer. Car & Fdy. |
| | 600 | Flat | 100,000 | 40 | 10 | S. U. | ..... | March | ..... | Amer. Car & Fdy. |
| | 700 | Gondola | 100,000 | 40 | 6 | Steel | ..... | March | ..... | Amer. Car & Fdy. |
| Studevant Mill Co. | 1 | Tank | 100,000 | 35 | 2 | Steel | 63,960 | April | ..... | Amer. Car & Fdy. |
| Tennessee Product & Chemical Corp. | 1 | Tank | 100,000 | 34 | 1 | Steel | 42,000 | April | ..... | Amer. Car & Fdy. |
| Union Tank Car Co. | 10 | Tank | 100,000 | .. | .. | ..... | 66,800 | February | 1948 | Amer. Car & Fdy. |
| | 7 | Tank | 100,000 | .. | .. | ..... | 64,700 | February | April | Amer. Car & Fdy. |
| | 500 | Tank | 100,000 | .. | .. | ..... | 72,000 | May | ..... | Company Shops |
| | 1 | Tank | 100,000 | .. | .. | ..... | 49,100 | August | October | Amer. Car & Fdy. |
| | 2 | Tank | 100,000 | .. | .. | ..... | ..... | September | ..... | Amer. Car & Fdy. |
| | 2 | Tank | 100,000 | .. | .. | ..... | 66,200 | October | November | Amer. Car & Fdy. |
| United States Army | 200 | Tank | 100,000 | 34 | 1¼ | Steel | 45,400 | July | ..... | Amer. Car & Fdy. |
| United States Navy | 200 | Tank | 10,000 gals. | .. | | ..... | ..... | May | 3rd atr. '49 | General American |
| Virginia Gas & Oil Corp. | 10 | Tank | 100,000 | 35 | 2 | Steel | 67,300 | May | ..... | Amer. Car & Fdy. |
| Warren Petroleum Corp. | 500 | Tank | 80,000 | .. | .. | Steel | 45,000 | April | 1st qtr. '49 | Amer. Car & Fdy. |
| Western Fruit Express | 200 | Refrig. | ..... | .. | .. | ..... | ..... | 1948 | ..... | Pacific Car & Fdy. |
| Wheeler, Reynolds & Stauffer | 1 | Tank | 6,000 gals. | .. | | ..... | ..... | August | Oct. '49 | General American |
| Wheeling Steel Corp. | 25 | Hopper | 140,000 | 40 | 8 | Steel | 49,000 | March | December | Greenville |
| Wilson & Co. | 6 | Tank | 7,000 gals. | .. | | ..... | ..... | March | July | General American |

## *United States—Export*

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Balfour, Guthrie & Co. | 5 | Tank | ..... | .. | .. | Steel | ..... | February | ..... | Amer. Car & Fdy |
| Canadian General Transit Co. | 10 | Tank | 7,000 gals. | .. | | ..... | ..... | February | July | General American |
| | 19 | Tank | 110,000 | .. | .. | ..... | ..... | April | Mar. '49 | General American |
| | 7 | Tank | 60,000 | .. | .. | ..... | ..... | April | Mar. '49 | General American |
| | 6 | Tank | 8,000 gals. | .. | | ..... | ..... | April | Mar. '49 | General American |
| | 6 | Tank | 11,200 gals. | .. | | ..... | ..... | June | April '49 | General American |
| | 12 | Tank | 10,000 gals. | .. | | ..... | ..... | June | May '49 | General American |
| Canadian Industries | 2 | Tank | 100,000 | .. | .. | Steel | ..... | August | ..... | Amer. Car & Fdy. |
| | 1 | Tank | 100,000 | 32 | 11 | Steel | 42,000 | October | ..... | Amer. Car & Fdy. |
| Comision Federal de Electricidad | 10 | Tank | 16,000 gals. | .. | | ..... | ..... | September | Oct. '49 | General American |
| Office d'Exploitation des Transports Coloniaux Belgium | 100 | Box | 35 metric tons | .. | | ..... | ..... | July | ..... | Pressed Steel |
| Petroleos Mexicanos | 100 | Tank | 10,000 gals. | .. | | ..... | ..... | June | 1949 | General American |
| Standard Oil Co. of N.J. (For Honduras) | 1 | Tank | 60,000 | .. | .. | ..... | ..... | February | ..... | General American |

## *Canada*

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Canadian National | 1,000 | Box | 100,000 | 40 | 6 | Steel | 44,500 | February | 1948 | Can. Car & Fdy. |
| | 250 | Gondola | 140,000 | 41 | 6 | Steel | 54,000 | March | Nov.-Dec. | Eastern Car |
| | 1,000 | Auto | 80,000 | 40 | 6 | Steel | ..... | May | 2nd qtr. '49 | Nat'l Steel Car |
| | 500 | Gondola | 140,000 | 40 | 8 | Steel | ..... | May | 2nd qtr. '49 | Eastern Car |
| | 500 | Hopper | 140,000 | 40 | 8 | Steel | ..... | May | 1st qtr. '49 | Eastern Car |
| | 300 | Refrig. | 100,000 | 40 | 0 | Steel | ..... | May | 2nd half '49 | R. R. Shops |
| | 490 | Flat | 120,000 | 52 | 0 | Steel | ..... | May | 3rd qtr. '49 | Can. Car & Fdy. |
| | 75 | Tank | 100,000 | 33 | 7 | Steel | ..... | July | 1st qtr. '49 | Can. Car & Fdy. |
| | 20 | Air Dump | 100,000 | 29 | 9 | Steel | 62,000 | October | 2nd qtr. '49 | Eastern Car |
| Canadian Pacific | 97 | Caboose* | 80,000 | 28 | 5¼ | Steel | 41,000 | Dec. '47 | 1949 | R.R. Shops |
| | 3 | Caboose* | 80,000 | 29 | 5¼ | Steel | 40,500 | Dec. '47 | July | R. R. Shops |
| | 850 | Gondola* | 140,000 | 39 | 6 | Steel | 55,000 | Dec. '47 | November | Eastern Car |
| | 350 | Triple Hopper* | 140,000 | 40 | 8 | Steel | 48,000 | Dec. '47 | Jan. '49 | Eastern Car |
| | 1,000 | Box* | 100,000 | 40 | 6 | Steel | 45,000 | Dec. '47 | Feb. '49 | Nat'l Steel Car |
| | 100 | Cov. Hopper* | 140,000 | 36 | 0 | Steel | 52,000 | Dec. '47 | December | Nat'l Steel Car |
| | 200 | Hopper | 140,000 | 40 | 8 | Steel | 50,500 | October | July '49 | Nat'l Steel Car |
| | 500 | Box | 100,000 | 40 | 6 | Steel | 45,000 | October | Mar. '49 | Nat'l Steel Car |
| | 6 | Caboose | 80,000 | .. | .. | Steel | ..... | August | ..... | Nat'l Steel Car |
| Ontario Northland | 25 | Ballast | 140,000 | 43 | 6 | Steel | ..... | June | ..... | Nat'l Steel Car |
| Roberval & Saguenay | 50 | Hopper | 140,000 | 40 | 8 | Steel-Alum. | 36,000 | September | Mar.-April '49 | Eastern Car |
| Sydney & Louisburg | 100 | Hopper | 100,000 | 30 | 11 | H. S. Steel | 38,700 | August | 1st qtr. '49 | Eastern Car |
| Toronto, Hamilton & Buffalo | 300 | Box | 100,000 | 40 | 6 | Steel | ..... | July | ..... | Nat'l Steel Car |
| | 100 | Flat | 100,000 | 52 | 6 | Steel | ..... | July | ..... | Nat'l Steel Car |

* Not listed last year.

# SIGNALING CONSTRUCTION INCREASES

***The new work in 1948, compared with 1947, included more interlockings, car retarders and highway crossing protection but less automatic block and centralized traffic control***

By JOHN H. DUNN
Signaling and Communications Editor

During 1948 the railroads in the United States and Canada installed a total of 11,872 signaling units, compared with 10,674 in 1947 and 11,384 units in 1946, and compared with an average of 8,491 for the 10 years 1939 to 1948, inclusive. The new construction in 1948, compared with that of 1947, included a greater volume of interlockings, more car retarders and highway crossing protection, but a little less automatic block and centralized traffic control.

During 1948, three railroads installed wayside controls for cab signaling on a total of 257 mi. of double track, these being the first projects of this nature to be carried out in compliance with the June, 1947, order of the Interstate Commerce Commission requiring cab-signaling, train-stop or train-control to be installed on all lines not now so equipped, on which trains are operated at 80 m.p.h. or more; a total of more than 23,000 track miles being involved in this order. In the table listing comparisons of signaling units installed each year, the wayside cab signaling construction in 1948 is given an arbitrary value of one unit for each track mile so equipped.

An accompanying table of automatic signal installations completed in 1948 omits several of the smaller projects involving the replacement of a few signals here and there, but the totals of the table include the units involved in these minor installations. These totals show that automatic block signaling was installed on 1,722 track miles in 1948, compared with 1,962 track miiles in 1947. In 1948, centralized traffic control was installed on 1,552 track miles, including 544 power switch machines and 1,747 lever-controlled signals, compared with 1,846 mi., 536 power switches and 1,810 signals for 1947.

The table listing the new interlockings installed in

**Automatic Interlockings Installed in 1948**

| Railroad | Location | Number of Signals | Manufacturer |
|---|---|---|---|
| A. T. & S. F. | Garnett, Kan. | 4 | Union |
| C. P. | Carrier, Que. | 4 | Union |
| C. & N. W. | Gillespie, Ill. | 4 | G. R. S. |
| C. B. & Q. | Waltonville, Ill. | 6 | |
| C. G. W. | Hampton, Ia. | 6 | Union |
| C. M. St. P. & P. | Renton, Wash. | 6 | Union |
| D. & R. G. W. | Ogden, Utah | 5 | G. R. S. |
| D. M. & I. R. | Ambridge, Wis. | 4 | G. R. S. |
| M. P. | Wichita, Kan. | 31 | G. R. S. |
| Virginian | Algren, Va. | 4 | G. R. S. |
| W. & L. E. | Monroeville, Ohio | 6 | Union |
| | | 80 | |

**New Interlockings Placed in Service in 1948**

| Railroad and Location | Number of Home Signals | Number of Switch Machines | Manufacturer |
|---|---|---|---|
| A. C. L. | | | |
| Falling Creek, Va. | 22 | 9ep | Union |
| Emporia, Va. | 13 | 6ep | Union |
| Weldon, N. C. | 31 | 15ep<br>1ep | Union |
| Florence, S. C. | 35 | 22ep | Union |
| A. T. & S. F. | | | |
| Amarillo, Tex. | 6 | 6 | Union |
| Ft. Worth, Tex. | 3 | 1 | Union |
| Sweetwater, Tex. | 24 | 6 | Union |
| B. & O. | | | |
| Willard, Ohio | 2 | 14 | G. R. S. |
| Harvey Jct., Ill. | 3 | 3 | G. R. S. |
| C. & O. | | | |
| Columbus, Ohio | 9 | 5 | Union |
| La Crosse, Ind. | 8 | 2 | Union |
| C. I. & L. | | | |
| Linden, Ind. | 6 | 2 | G. R. S. |
| D. L. & W. | | | |
| Wayland, N. Y. | 1 | 2 | Union |
| D. & R. G. W. | | | |
| Becks, Utah | 2 | 2 | G. R. S. |
| No. Salt Lake, Utah | 5 | 2 | G. R. S. |
| Erie | | | |
| Sterling, Ohio | 3 | 1 | Union |
| G. N. | | | |
| Des Lacs, N. D. | 3 | 1 | G. R. S. |
| Snowden, Mont. | 4 | 2 | G. R. S. |
| Scenic, Mont. | 6 | 2 | G. R. S. |
| K. & I. T. | | | |
| Louisville, Ky. | 13 | 9 | G. R. S. |
| L. V. | | | |
| Buffalo, N. Y. | 8 | 8 | G. R. S. |
| M. P. | | | |
| Kansas City, Mo. | 40 | 49 | G. R. S. |
| I.-G. N. | | | |
| Valley Jct., Tex. | 8 | .. | G. R. S. |
| G. C. L. | | | |
| Bay City, Tex. | 4 | .. | G. R. S. |
| Beaumont, Tex. | 3 | 1m | G. R. S. |
| N. Y. C. | | | |
| P. & L. E. | | | |
| Glassport, Pa. | 1 | .. | Union |
| C. C. C. & St. L. | | | |
| Duane, Ind. | 12 | .. | G. R. S. |
| Indianapolis, Ind. | 16 | 14 | G. R. S. |
| N. Y. City Transit | | | |
| Euclid Ave. | 33 | 33 | G. R. S. |
| Pitkin Yard | 97 | 66 | G. R. S. |
| King's Hwy. | 13 | 14 | G. R. S. |
| N. & W. | | | |
| Bedford, Va. | 4 | 1ep | Union |
| Wilmore, W. Va. | 15 | 6ep | Union |
| Alnwick, W. Va. | 14 | 6ep | Union |
| Richlands, Va. | 8 | 2ep | Union |
| N. P. | | | |
| Huntley, Mont. | 10 | 6 | G. R. S. |
| Penna. | | | |
| Indianapolis, Ind. | .. | 26ep | Union |
| Columbus, Ohio | 10 | 6 | Union |
| Reading | | | |
| Lebanon Valley, Pa. | 5 | 3 | G. R. S. |
| Shippensburg, Pa. | 6 | 6 | G. R. S. |
| Williamsport, Pa. | 6 | .. | G. R. S. |
| Mahanoy Tunnel, Pa. | 4 | 3 | Union |
| Buch Mt., Pa. | 4 | 4 | Union |
| R. F. & P. | | | |
| North Doswell, Va. | 6 | 6ep | Union |
| South Doswell, Va. | 5 | 5ep | Union |
| Southern | | | |
| Chat. Sta., Chattanooga, Tenn.† | 24 | 60 | G. R. S. |
| S. P. | | | |
| Pelve, Ariz. | 5 | 2 | Union |
| T. & P. | | | |
| Longview, Tex. | 24 | 15 | G. R. S. |
| U. P. | | | |
| No. Platte, Neb. | 2 | 7 | Union |
| Wabash | | | |
| Bement, Ill. | 6 | 4 | Union |
| W. M. | | | |
| Emory Grove, Md. | 4 | 4ep | Union |
| Walbrook, Md. | 5 | 3ep | Union |
| TOTALS | 601 | 360 electric<br>112 electro-pneu.<br>1 mechanical<br>473 | |

† New plant to replace old one.

1948 includes some projects in which a complete new modern plant was installed to replace an old interlocking in its entirety. This table is compiled to show the new interlocking equipment installed rather than to indicate an increase in the number of plants in service.

During 1948 a big increase was made in the installation of protection at highway-railroad grade crossings, 3,634 protective units being installed at 1,391

## Spring Switches Installed in 1948

| Railroad | Number of Spring Switches Installed | Number Equipped with Facing-Point Lock | Signals Installed as Protection |
|---|---|---|---|
| A. T. & S. F. | 78s | .. | 145 |
| | 3j | | |
| | 3y | | |
| A. & St. A. B. | 2y | .. | .. |
| A. C. L. | 1y | 16 | 26 |
| | 15s | | |
| B. & O. | 8s | 1 | 15 |
| B. & M. | 1s | .. | 5 |
| C. N. | 1s | .. | 3 |
| | 1y | | |
| C. P. | 4s | 4 | 16 |
| | 1d | | |
| C. of Ga. | 6s | 6 | 12 |
| C. & O. | 2s | 2 | .. |
| C. B. & Q. | 7s | 8 | 15 |
| | 1y | | |
| C. I. & L. | 3s | .. | .. |
| C. R. I. & P. | 1s | 1 | 3 |
| C. & I. M. | 2s | .. | 2 |
| C. & N. W. | 2d | 2 | .. |
| D. L. & W. | 2s | .. | 8 |
| D. & R. G. W. | 1d | 1 | 3 |
| G. N. | 24s | 24 | 80 |
| | 3y | | |
| I. C. | 5s | .. | 8 |
| L. & N. | 12s | .. | 36 |
| M. & St. L. | 2s | 2 | 4 |
| M.-K.-T. | 10s | .. | 10 |
| M. P. | 2s | 3 | 4 |
| | 1y | | |
| I.-G. N. | 1s | 1 | 3 |
| N. Y. O. & W. | 1s | .. | 1 |
| N. & W. | 1y | 1 | 3 |
| N. P. | 3s | 3 | 13 |
| | 1d | | |
| | 1j | | |
| Reading | 2s | 6 | 8 |
| | 4d | | |
| R. F. & P. | 1s | .. | .. |
| St. L.-S. F. | 7s | .. | 7 |
| S. A. L. | 5s | 5 | 10 |
| S. P. & S. | 1s | 1 | 3 |
| S. P. | 17s | 15 | 34 |
| T. & P. | 10s | .. | 30 |
| U. P. | 1y | 1 | 3 |
| Virginian | 2s | 2 | 2 |
| Wabash | 1s | 1 | 3 |
| W. M. | 1s | 1 | 1 |
| Totals | 237 sidings<br>14 yard<br>9 end double track<br>4 junction<br>264 | 107 | 516 |

## New Automatic Block Signaling Placed in Service in 1948

| Railroad and Location | Miles of Road | Number of Signals | Manufacturer |
|---|---|---|---|
| A. T. & S. F. | | | |
| Buffalo Gap, Tex.-Sweetwater | 40.0s | 59 | Union |
| A. C. L. | | | |
| Richmond, Va.-Whitakers | 109.0d | 101c | Union |
| B. & O. | | | |
| Vernon, Ind.-New Albany | 54.1s | 96 | G. R. S. |
| Watson, Ind.-Jeffersonville | 4.5 s | 4 | G. R. S. |
| Berryburg, W. Va.-Grafton | 13.5s | 11 | G. R. S. |
| C. N. | | | |
| Halifax, N. S.-Windsor Jct. | 32.0d | 26 | G. R. S. |
| Barraute, Que. | 4.7s | 4 | Union |
| Alberta | .. | 11 | G. R. S. |
| C. P. | | | |
| Kamloops, B. C.-Spences Bridge | 63.8s<br>8.6d | 84 | G. R. S. |
| Brownville, Me.-Kirby | 42.8s | 68 | G. R. S. |
| C. & O. | | | |
| Beaver Jct., Ky.-Elkhorn City | 42.0s | 96 | Union |
| C. I. & L. | | | |
| St. John, Ind.-Lowell | 3.7s | 2 | G. R. S. |
| C. M. St. P. & P. | | | |
| Fox Lake, Ill.-Janesville, Wis. | 49.6s | 52 | Union |
| C. & I. M. | | | |
| Kilbourne, Ill.-Kelsey | 6.5s | 6 | Union |
| D. L. & W. | | | |
| Scranton, Pa.-Clarks Summit | 6.5t | 19 | Union |
| Wayland, N. Y.-Groveland | 17.0d | 17 | Union |
| G. N. | | | |
| Canisteo, Minn. | 2.2s | 3 | G. R. S. |
| Calumet, Minn. | 3.5s | 7 | G. R. S. |
| Nashwauk, Minn. | 4.9s | 7 | G. R. S. |
| Morris, Minn.-Hancock | 10.3s | 14 | G. R. S. |
| Stanley, N. D.-Ross | 7.7s | 8 | G. R. S. |
| I. T. | | | |
| Granite City, Ill.-Madison | 3.2s | 5 | Union |
| Me. C. | | | |
| Winn, Me.-Mattawamkeag | 2.5s | 3 | G. R. S. |
| M. & St. L. | | | |
| Maxwell, Ill.-Peoria | 3.6s | 2 | Union |
| M.-K.-T. | | | |
| Denison, Tex.-Bethard | 94.6s | 120 | Union |
| San Marcos, Tex.-Melton | 42.2s | 54 | Union |
| M. P. | | | |
| Piedmont, Mo.-Poplar Bluff | 36.0s<br>61.5d | 56 | G. R. S.<br>G. R. S. |
| Dodson, Mo.-Stilwell, Kan. | 18.0s | 16 | G. R. S. |
| N. Y. C. | | | |
| Herkimer, N. Y.-Schuyler Jct. | 9.0f | 64 | G. R. S. |
| C. C. C. & St. L. | | | |
| Glen Echo, Ohio-Springfield | 4.9s<br>2.9d | 19 | G. R. S. |
| M. C. | | | |
| Hammond, Ind.-Galien, Mich. | 51.7s<br>103.4d | 92 | G. R. S. |
| N. Y. C. & St. L. | | | |
| Edwardsville, Ill.-Madison | 14.0s | 13 | Union |
| N. Y. City Tr. | | | |
| Culver Line | 3.4t<br>0.9d | 86 | G. R. S. |
| Brighton Line | 0.4d | 6 | G. R. S. |
| Fulton Line | 2.1f<br>0.3d | 60 | G. R. S. |
| Broadway-Lex. Ave. Line | .. | 22 | Union |
| White Plains Rd. Line | Yard | 8 | Union |
| N. Y. N. H. & H. | | | |
| Holmes, N. Y.-Poughkeepsie | 27.8d | 35 | G. R. S. |
| Hartford, Ct.-Springfield, Mass. | 24.9d | 42 | G. R. S. |
| Groton, Ct.-Midway | 3.6d | 6 | G. R. S. |
| Reading | | | |
| Tamaqua, Pa.-Tunnel | 2.1d | 3 | Union |
| Gordon, Pa.-Locust Summit | 5.8d | 10 | Union |
| Emmaus, Pa.-Allentown | 5.2d | 4 | Union |
| Lees Cross Roads, Pa.-SX Jct. | 3.8d | 4 | G. R. S. |
| S. A. L. | | | |
| Baldwin, Fla.-Starke | 25.5d | 32 | Union |
| I. M. & C. Jct., Fla.-Ridgewood | 8.0s | 25 | Union |
| S. P. & S. | | | |
| Ainsworth Jct., Wash.-Ft. Wright | 105.0s | 76 | G. R. S. |
| Skamania, Wash.-Stevenson | 11.0s | 10 | G. R. S. |
| Fountain, Wash.-Sundale | 6.0s | 8 | G. R. S. |
| W. M. | | | |
| Emory Grove, Md.-Howardsville | 9.0d | 10 | Union |
| Miles of road, single track | 761.2 | 1,711 signals | |
| double track | 454.3 | | |
| three track | 9.9 | | |
| four track | 11.1 | | |
| Total road miles | 1,236.5 | | |
| track miles | 1,722.9 | | |

## Comparison of Annual Signal Construction

| | 1948 | 1947 | 1946 | 1955 | 1944 | 1943 | 1942 | 1941 | 1940 | 1939 |
|---|---|---|---|---|---|---|---|---|---|---|
| Automatic Block Signals | 1,711 | 2,269 | 3,078 | 2,350 | 1,539 | 1,690 | 1,421 | 1,407 | 1,017 | 879 |
| Cab Signaling | 514 | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Interlockings | | | | | | | | | | |
| Signals and switches | | | | | | | | | | |
| At new plants | 1,074 | 857 | 1,529 | 910 | 851 | 1,498 | 785 | 518 | 1,024 | 396 |
| At rebuilt plants | 665 | 408 | 993 | 940 | 687 | 760 | 554 | 693 | 734 | 545 |
| At automatic plants | 80 | 83 | 132 | 88 | 62 | 55 | 78 | 80 | 125 | 96 |
| Spring Switches | | | | | | | | | | |
| Spring buffer mechanisms | 264 | 356 | 554 | 764 | 382 | 448 | 284 | 275 | 294 | 222 |
| Mechanical facing-point locks | 107 | 107 | 248 | 341 | 115 | 88 | 126 | 159 | 97 | 104 |
| Signals at spring switches | 516 | 491 | 707 | 991 | 553 | 498 | 384 | 354 | 336 | 228 |
| Centralized Traffic Control | | | | | | | | | | |
| Power switch machines | 565 | 538 | 453 | 633 | 596 | 463 | 263 | 190 | 121 | 38 |
| Semi-automatic signals | 1,725 | 1,810 | 1,385 | 2,217 | 2,141 | 1,775 | 1,030 | 675 | 375 | 122 |
| Intermediate signals in C.T.C. territory | 738 | 853 | ... | ... | ... | ... | ... | ... | ... | ... |
| Classification Yards | | | | | | | | | | |
| Car retarders | 95 | 23 | 18 | 14 | 25 | ... | 51 | ... | 11 | 2 |
| Power switch machines | 192 | 27 | 73 | 57 | 52 | ... | 108 | ... | 19 | 3 |
| Highway Crossing Protection | | | | | | | | | | |
| Protective units | 3,621 | 2,852 | 2,214 | 1,089 | 643 | 477 | 1,297 | 2,615 | 3,006 | 2,385 |
| TOTALS | 11,872 | 10,674 | 11,384 | 10,394 | 7,646 | 7,752 | 6,381 | 6,966 | 7,159 | 5,020 |

## Centralized Traffic Control Placed in Service During 1948

| Railroad | Location | Miles of Road | Number of Levers | Number of Power Switches | Number of Signals Controlled by Levers | Number of Intermediate Automatic Signals | Manufacturer |
|---|---|---|---|---|---|---|---|
| A. T. & S. F. | Newtown, Kan.-Wichita | 24.0s | 26 | 11 | 39 | 10 | Union |
| | So. Jct., Kan.-Mulvane | 14.7s | 21 | 14 | 21 | 7 | Union |
| | Canyon, Tex.-Texico, N. M. | 73.8s<br>6.2d | 105 | 43 | 99 | 51 | Union |
| B. & M. | Fitchburg, Mass. | 1.1s | .. | .. | .. | .. | G. R. S. |
| | Gardner, Mass. | .. | 3 | .. | .. | .. | G. R. S. |
| | Deerfield, East, Mass. | .. | .. | 1 | .. | .. | G. R. S. |
| | Lowell, Mass.-No. Chelmsford | 1.4s<br>2.0d | 52 | .. | .. | .. | G. R. S. |
| | No. Chelmsford, Mass. | 1.0s | | 35<br>29L | 42<br>.. | 22<br>.. | |
| | Willows | 9.8d | | .. | .. | .. | |
| C. P. | Schreiber, Ont.-Selim | 9.4s | 6 | .. | 6 | 4 | G. R. S. |
| C. & O., Ch. Dist. | Springwood, Va.-Iron Gate | 27.3s | 29 | 12 | 37 | .. | Union |
| | St. Albans, W. Va.-MacCorkle | 22.1s | 32 | 8 | 32 | 15 | Union |
| | Sproul, W. Va.-Brounland | 2.1s | .. | 3 | 7 | 1 | Union |
| | Limeville, Ky.-Wheeler | 11.3d | 19 | 13 | 21 | 4 | Union |
| P. M. Dist. | St. Joseph, Mich.-Saugatuck | 46.8s<br>7.2d | 42 | 12 | 48 | 32 | G. R. S. |
| C. & N. W. | West Chicago, Ill.-Malta | 31.0d | 36 | 33 | 105 | 37 | G. R. S. |
| C. B. & Q. | Machens, Mo.-Old Monroe | 24.7s | 20 | 9 | 45 | 14 | G. R. S. |
| | Beardstown, Ill. | 0.8s | 2 | .. | 3 | .. | |
| C. R. I. & P. | Allerton, Ia.-Elden | 64.0s | 23 | 10 | 46 | 40 | Union |
| D. & R. G. W. | Bragdon, Colo.-Pueblo | 7.3s<br>2.7d | 4 | 1 | 8 | 5 | G. R. S. |
| D. M. & I. R. | Buhl, Minn.-Sherwood | 12.5s<br>1.8d | 13 | 7 | 20 | .. | Union |
| Erie | Buchanan Jct., Pa.-Amasa | 20.0s | 15 | 5 | 16 | 15 | Union |
| G. M. & O. | Tamms, Ill.-No. Cairo | 15.7s | 7 | 3 | 13 | 10 | G. R. S. |
| I. C. | Lake View, Tenn.-Lake Cormorant | 6.1s | 10 | 4 | 17 | 4 | Union |
| L. & N. | Pruse, Ky.-Perritt | 76.0s | 61 | 24 | 37 | 36 | G. R. S. |
| M. P. | Oliphant, Ark. | .. | .. | 4 | 8 | 8 | G. R. S. |
| | Diaz, Ark. | .. | 4 | 3 | 10 | .. | G. R. S. |
| | Benton, Ark. | .. | 1 | 1 | 2 | .. | G. R. S. |
| G. C. L. | Edmonds, Tex.-Vanderbilt | 76.2s | 43 | 20 | 62 | 42 | G. R. S. |
| N. Y. C. & St. L. | Lima, Ohio-St. Marys | 21.5s | 29 | 6 | 45 | 8 | Union |
| | New Haven, Ind.-Miller City, O. | 47.0s | 45 | 16 | 86 | 14 | Union |
| N. & W. | Jack, Va.-Poe | 3.4s | 9 | 9 | 10 | .. | Union |
| | Bonsack, Va.-Montvale | 11.0d | 22 | 17 | 40 | 14 | Union |
| | Kermit, W. Va.-Millstone | 13.2s<br>3.0d | 10 | 10 | 14 | 8 | Union |
| P. & L. E. | Robinson, Pa.-Youngstown, Ohio | 1.6s<br>6.2d | 28 | 17 | 24 | 6 | Union |
| St. L.-S. F. | Tulsa, Okla.-Afton | 72.9s | 57 | 27 | 80 | 28 | Union |
| S. A. L. | Gross, Fla.-Baldwin | 34.4s | 22 | 12 | 36 | 12 | Union |
| | Central, Fla.-Ala. Jct., Ga. | 2.0s | 9 | 5 | 9 | 2 | Union |
| S. P. | Alhambra, Cal.-Colton | 50.4s | 52 | 25 | 102 | 38 | Union |
| U. P. | Caliente, Nev.-Salt Lake City, Utah | 320.5 s | 170 | 81 | 338 | 167 | Union |
| Union | BR Tower, Pa.-Curry Hollow | 1.7s<br>3.3d | 9 | 4 | 7 | .. | Union |
| W. & L. E. | Wellington, Ohio-Bellevue | 30.0s | 34 | 10 | 12 | 18 | Union |
| CONTROLLED MANUAL BLOCK SIGNALING<br>With Hand-Throw Switches | | | | | | | |
| W. P. | Niles, Cal.-Oakland | 22.1s | 19 | .. | 24 | 8 | Union |
| CONTROLLED SIGNALS<br>With Power-Operated Passing Track Switches | | | | | | | |
| S. A. L. | Coleman, Fla.-Valrico | 66.5s | 48 | 21 | 72 | 24 | Union |
| CONTROLLED SIGNALS<br>At Ends of Passing Tracks | | | | | | | |
| S. A. L. | Coleman, Fla.-Sherman | 147.0s | 83 | .. | 82 | 47 | Union |
| Totals Miles of road, single track | | 1,361.2 | 1,189 | 565 | 1,725 | 738 | |
| Miles of road, double track | | 95.5 | | | | | |

crossings, compared with 2,852 units at 1,084 crossings in 1947. In 1948, 775 electrically-operated short-arm gates were installed as compared with 608 in the year previous, and the tendency is to include gates with flashing-light signals in new projects at crossings of busy highways with tracks on which the train speeds are high.

In 1948, the Baltimore & Ohio, the Union Pacific and the Chesapeake & Ohio constructed gravity-type freight classification yards including power switches and car retarders. Also, extensive replacements were made on other roads, including the Boston & Maine, which installed 8 modern retarders totaling 1,169 rail feet to replace 12 older types of retarders.

## Highway-Railroad Crossing Protection Installed in 1948

| Railroad | No. of Cross'gs Protected by new Installations | No. of Flashing-light Signals | No. of Electrically Operated Gates | Source of Funds Figures Show Number of Crossings Protected: Railroad | Public Funds of Any Source | Joint Railroad and Public Funds |
|---|---|---|---|---|---|---|
| A. C. L. | 21 | 43 | 18 | 5 | .. | 16 |
| A. T. & S. F. | 80 | 145<br>14w | 12 | 34 | 29 | 7 |
| B. & O. | 58 | 137 | 12 | 35 | 15 | 8 |
| B. & M. | 30 | 79 | 42 | 24 | 6 | .. |
| C. N. | 31 | 63 | 6 | .. | .. | 31 |
| G. T. W. | 22 | 41 | 13 | 7 | 4 | 11 |
| C. P. | 26 | 51 | .. | 2 | 3 | 21 |
| C. N. J. | 8 | 35 | 6 | 8 | .. | .. |
| N. Y. & L. B. | 2 | 8 | 2 | 2 | .. | .. |
| C. of Pa. | 2 | 9 | 2 | 1 | .. | 1 |
| C. of Ga. | 1 | 3 | .. | 1 | .. | .. |
| C. V. | 2 | 4 | 4 | .. | 2 | .. |
| C. & N. W. | 23 | 22<br>5w<br>18d | 8 | 17 | 6 | .. |
| C. & W. I. | 5 | .. | 5 | 5 | .. | .. |
| C. B. & Q. | 35 | 62<br>8d | 22 | 13 | 1 | 31 |
| C. G. W. | 5 | 8<br>2d | 4 | 1 | 2 | 2 |
| C. I. & L. | 7 | 13 | .. | 7 | .. | .. |
| C. M. St. P. & P. | 22 | 17<br>26d<br>3w | 14 | 7 | 15 | .. |
| C. N. S. & M. | 3 | 6 | 3 | 2 | 1 | .. |
| C. R. I. & P. | 31 | 61<br>1d | 43 | 17 | 13 | 1 |
| C. S. S. & S. B. | 4 | 6 | 1 | 4 | .. | .. |
| C. & S. | 2 | 4 | .. | .. | 2 | .. |
| C. & O. | | | | | | |
| Ches. Dist. | 27 | 76 | .. | 26 | .. | 1 |
| P. M. Dist. | 37 | 73 | 20 | 6 | 11 | 20 |
| D. & H. | 27 | 65<br>7t | 62 | 27 | .. | .. |
| D. & R. G. W. | 6 | 12 | 2 | 5 | 1 | .. |
| D. L. & W. | 9 | 38 | 9 | 9 | .. | .. |
| D. M. & I. R. | 4 | .. | 8 | 4 | .. | .. |
| D. T. & I. | 3 | 6 | 2 | ¼ | ¾ | 2 |
| Erie | 22 | 41<br>6t | 18 | 17 | .. | 5 |
| E. J. & E. | 6 | 8 | 4 | 6 | .. | .. |
| F. E. C. | 31 | 55 | 32 | 15 | 16 | .. |
| G. & F. | 1 | 2 | .. | .. | 1 | .. |
| G. N. | 27 | 2 | 52 | 22 | 2 | 3 |
| G. M. & O. | 8 | 6 | 10 | 7 | 1 | .. |
| I. C. | 35 | 71 | 16 | 27 | 8 | .. |
| I. T. | 2 | 4 | .. | .. | .. | 2 |
| K. & I. T. | 2 | 3 | .. | 2 | .. | .. |
| L. S. & I. | 1 | 2 | .. | .. | .. | 1 |
| L. & N. E. | 3 | 6 | .. | 1.5 | 1.5 | .. |
| L. V. | 6 | 8 | 8 | 3 | .. | 3 |
| L. & H. R. | 2 | 4 | .. | .. | .. | .. |
| L. & N. | 8 | 14 | 2 | 5 | 3 | .. |
| Me. C. | 13 | 33 | 9 | 11 | 2 | .. |
| P. T. | 1 | 4 | .. | 1 | .. | .. |
| M. & St. L. | 6 | 12 | .. | 5 | 1 | .. |
| M.-K.-T. | 16 | 32 | 2 | 13 | 3 | .. |
| M. P. | 31 | 70 | 10 | 17 | .. | 14 |
| I.-G. N. | 8 | 16 | .. | 8 | .. | .. |
| G. C. L. | 16 | 32 | .. | 16 | .. | .. |
| N. C. & St. L. | 10 | 18 | 3 | 8 | 2 | .. |
| N. Y. C. | 48 | 101 | 56 | 40 | 4 | 4 |
| P. & L. E. | 1 | 3 | 2 | 1 | .. | .. |
| M. C. | 22 | 40 | 24 | 4 | 7 | 11 |
| C. C. C. & St. L. | 22 | 37 | 13 | 9 | 3 | 10 |
| N. Y. C. & St. L. | 10 | 20 | .. | 5 | .. | 5 |
| N. Y., N. H. & H. | 47 | 118 | 2 | 47 | .. | .. |
| N. & W. | 11 | 9<br>6w | 8 | 11 | .. | .. |
| N. P. | 42 | 44<br>30d | 4 | 38 | 4 | .. |
| P. E. | 13 | 23<br>3w | .. | .. | 7 | 6 |
| Penna. | 63 | 145 | 92 | 33 | 10 | 20 |
| P. R. S. | 6 | 12 | 4 | 6 | .. | .. |
| L. I. | 3 | 12 | 4 | 3 | .. | .. |
| Reading | 3 | 7 | 2 | 2 | 1 | .. |
| St. L.-S. F. | 51 | 90 | 14 | 38 | .. | 13 |
| S. D. & A. E. | 1 | 2 | .. | .. | 1 | .. |
| St. L. S. W. | 21 | 42 | .. | 4 | 2 | 15 |
| S. A. L. | .. | .. | .. | .. | .. | .. |
| Southern | 40 | 84 | 6 | 20 | 19 | 1 |
| C. N. O. & T. P. | 2 | 4w | .. | 2 | .. | .. |
| Chat. Sta. | 2 | 4w | .. | 2 | .. | .. |
| A. G. S. | 7 | 14w | 2 | 5 | 2 | .. |
| G. S. & F. | 1 | 2 | .. | .. | 1 | .. |
| St. J. R. T. | 2 | 4 | .. | 2 | .. | .. |
| S. P. | 55 | 104<br>2w | 2 | 3 | 25 | 27 |
| T. & N. O. | 21 | 44 | .. | 5 | 16 | .. |
| S. P. & S. | 9 | 16<br>2w | .. | 9 | .. | .. |
| T. C. | 3 | 2<br>4d | .. | 3 | .. | .. |
| T. R. A. St. L. | 2 | 5 | .. | 1 | 1 | .. |
| T. & P. | 7 | 14 | 2 | 6 | 1 | .. |
| U. P. | 26 | 49 | 6 | 7 | 2 | 17 |
| Virginian | 4 | 8 | 2 | 3 | .. | 1 |
| Wabash | 10 | 16<br>2w | 8 | .. | 9 | 1 |
| W. M. | 4 | 8 | .. | .. | .. | .. |
| W. P. | 26 | 52 | .. | 9 | 3 | 18 |
| W. & L. E. | 4 | 8 | .. | 3 | .. | 1 |
| Totals | 1,391 | 2,705 flashing-light signals<br>50 wig-wags<br>89 rotating-disk signals<br>13 traffic type signals<br>2,866 | 775 | 800¾ | 307¼ | 332 |

## Car Retarder Projects Placed in Service During 1948

| Railroad and Location | No. of Tracks | No. of Retarders | Rail Feet Retarders | No. of Switches | No. of Track Circuits | Signals | Skates | No. of Towers and Contro Machines | Manufacturer |
|---|---|---|---|---|---|---|---|---|---|
| B. & O..... EB Willard, Ohio..... | 32 | 11 | 847 | 34 | 39 | 2 | 0 | 1 | G. R. S. |
| B. & O..... WB Willard, Ohio..... | 20 | 11 | 847 | 23 | 28 | 2 | 0 | 1 | G. R. S. |
| B. & O..... Lorain, Ohio ..... | 5 | 4 | 286 | 4 | 4 | 0 | 0 | 1 | G. R. S. |
| B. & M..... Mystic Jct., Mass..... | .. | 8 | 1,169 | .. | .. | .. | .. | .. | Union |
| C. & O..... WB Walbridge, Ohio..... | 68 | 33 | 2,161 | 68 | 68 | .. | 68 | 4 | Union |
| Lakefront Dock & RR Terminal Co., Toledo, Ohio..... | 18 | 6 | 649 | 10 | 15 | 0 | 0 | 2 | G. R. S. |
| U. P..... No. Platte, Neb..... | 42 | 18 | 1,298 | 41 | 41 | 5 | 0 | 3 | Union |
| U. P..... Additions at Pocatello, Idaho | 12 | 4 | 299 | 12 | 12 | 0 | 0 | 0 | Union |
| TOTALS ..... | | 95 | 7,547 | 192 | | 9 | 68 | 12 | |

The Norfolk & Western's "Powhatan Arrow" moving eastward over a major line change completed during 1948 between Peebles, Ohio, and Mineral Springs. The new line reduced the grade from 1.14 to 0.52 per cent

# CONSTRUCTION ACTIVITY INCREASES

***Outlay in 1948 to improve roadway and structures highest since 1930, yet it amounted to only 25 per cent of total capital expenditures***

By HENRY E. MICHAEL
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As predicted by *Railway Age* last March, gross expenditures for additions and betterments to the fixed properties of the railways reached an estimated total of $350,000,000 in 1948. Reports from practically all the railways of the country to *Railway Age* show that, excluding grade crossing eliminations, the total amount authorized for improvement projects costing more than $100,000 — either completed during 1948 or in progress at its end — was in excess of $365,000,000. Of the latter total, more than $100,000,000 represents those projects which were completed during the year, although not necessarily started after January 1. Not since 1930 has the dollar volume of railway construction been so great.

Although pleased that construction reached this height, many engineering officers of the railways indicate that even higher expenditures would have been desirable. In fact, they probably would have been higher had not the expenditures for equipment taken such a high percentage of the A. & B. dollar. Not since 1935 have gross capital expenditures for roadway and structures equaled those for the purchases of equipment. It is estimated that in 1948 only 25 per cent of capital expenditures were made for roadway purposes.

On the other hand, railway management is aware of the need for spending money for improvements to roadway and structures in order to effect the economies that are inherent in most of the new equipment being put into service. This is indicated by the fact that a large percentage of the improvement work in progress during 1948 was complementary to the new equipment purchased or essential to the realization of its increased capacity. Yards and terminals were improved to facilitate the receiving and dispatching of cars; passing sidings were lengthened to accommodate longer trains; and Diesel shops and enginehouses were constructed to service new motive power.

Consistent with this policy, yard and terminal improvements constituted the largest single category of capital improvements in progress during 1948. A total of 77 projects of this character, each costing more than $100,000, were reported, of which 40 were completed during the year. The total cost of 56 of these projects, for which expenditures were given, will be about $75,000,000 — twelve of them involving more than $1,000,000 apiece.

While yard and terminal improvements were jumping from second place in 1947 to first in 1948, in point of both number of projects involved and the amount of money allotted for their completion, signal projects designed to improve the speed and safety of trains on the road moved from third to second place. In this category, a total of 76 projects involving an expenditure of more than $100,000 each were reported. Sixty of these, for which specific cost figures were given, involved a total expenditure of just a little less than $40,000,000. Included in this classification are only those projects involving track work, those that encompass signal work only being covered in an article on signaling elsewhere in this issue.

## *Bridge Work Increases*

The third largest classification of capital expenditures during 1948 was that of revisions of alinement and grade. Fifty-four projects of this nature costing more than $100,000 each were reported in progress during the year, nine of which are known to have cost more than $1,000,000 apiece. Forty-five of these projects, for which figures were given, cost a total of $35,000,000. Of the total number of revisions under-

only 11,234 mi. of new lines have been constructed, resulting in a net decrease of 21,861 mi. in the total mileage of the railways of the country. This is an average net reduction of about 683 mi. per year.

Georgia had the largest total miles of line abandoned in 1948—109.16 mi.; Nevada ranked second with 97.28 mi. abandoned; Utah was third with 51.91 mi.; while Pennsylvania with 46.23 mi. was in fourth place. The three states having the largest total abandonments during the 17-year period ended with 1948 continued to hold the same relative rank as they did in 1945, 1946 and 1947. However, the fourth place ranking changed in 1948 by virtue of Pennsylvania displacing Missouri. Texas continued to lead all states with 1,431.34 mi. abandoned in the period, although no lines were discontinued in 1948; Michigan was second with 1,167.05 mi.; California was third with 1,152.89 mi.; and Pennsylvania was fourth with 1,117.75 mi.

The abandonments in the various regions in the United States, both during the past year and accumulated totals for the period between 1932 and 1927, inclusive, are shown in an accompanying table.

A total of 23 mi. of line were abandoned in Canada during 1948 to bring the total since 1932 to 1,241 mi. In that period Canadian abandonments have ranged between 11 and 399 mi. per year, except for 1943, when less than one mile was discontinued, and in 1945 when no lines were abandoned.

## Lines Abandoned in the United States, Canada and Mexico in 1948

| | Lines abandoned and taken up (miles) | Lines abandoned but not yet taken up (miles) |
|---|---|---|
| UNITED STATES | | |
| Atlantic & Carolina | | |
| Warsaw, N. C., to Kenansville | | 9.50 |
| Atlantic Coast Line | | |
| Anguilla, Ga., to Southern Junction | 6.13 | |
| Oak Ridge branch, Fla. | 3.09 | |
| Bingham & Garfield | | |
| Entire line, Bingham, Utah to Garfield | 28.89 | |
| Central of New Jersey | | |
| East end Hackensack River bridge, Jersey City, N. J., to west end Hackensack River bridge, Kearny, N. J. | | 0.64 |
| Chicago, Indianapolis & Louisville | | |
| Armour, Ind., to Creston (relocation) | 3.81 | |
| Chicago, Milwaukee, St. Paul and Pacific | | |
| Reno, Minn., to Isinours | 13.67 | |
| Chicago, Rock Island & Pacific | | |
| At McPherson, Kan. | 4.55 | |
| At Numa, Iowa | 4.73 | |
| Clarion River | | |
| Entire line, Hallton, Pa., to Carman | | 11.06 |
| Denver & Rio Grande Western | | |
| Moroni, Utah, to Nephi | 23.02 | |
| Des Moines Union | | |
| Des Moines, Iowa, South yard | 0.30 | |
| Detroit, Caro & Sandusky | | |
| Peck, Mich., to Sandusky | 10.73 | |
| Erie | | |
| Hillside Junction, Scranton, Pa., to River street | 5.32 | |
| Flint River & Northeastern | | |
| Entire line, Pelham, Ga., to Tichnor | 23.03 | |
| Gainesville Midland | | |
| Belmont, Ga., to Monroe | 32.00 | |
| Grasse River | | |
| West yard, Conifer, N. Y., to Cranberry Lake | 13.20 | |
| Illinois Central | | |
| Greenwood, Miss., to Grenada | 31.35 | |
| Interstate | | |
| Dorchester, Va., to Sutherland | 1.71 | |
| Lehigh & New England | | |
| Wind Gap, Pa., to Pen Argyl | | 0.87 |
| Louisville & Nashville | | |
| Maloney, Ky., to Fincastle | 6.07 | |
| Maine Central | | |
| Coos Junction, N. H., to North Stratford, Vt. | | 19.35 |
| Minneapolis & St. Louis | | |
| Corwith, Iowa, to St. Benedict | 7.37 | |
| Minneapolis, St. Paul & Sault Ste. Marie | | |
| West of Antioch, Ill., to end of Wilmot spur | 3.37 | |
| Missouri Pacific | | |
| At Granite Bend, Mo. | 3.96 | |
| Benton, Ark., to end of new construction near QQ Junction | | 4.16 |
| Mobile & Gulf | | |
| Fayette, Ala., to Brownville | 23.00 | |
| New York Central | | |
| Wellsboro, Pa., to Antrim | 11.87 | |
| Manlius, N. Y., to Oran | 2.30 | |
| (Pittsburgh & Lake Erie) | | |
| Dickerson Run branch (portion) | 0.11 | |
| Elwell branch (portion) | 0.80 | |
| Little Redstone Branch Junction, to Landon | 1.43 | |
| New York, New Haven & Hartford | | |
| Tremont, Mass., to Fairhaven | 0.10 | |
| Hawleyville, Conn., to Litchfield | | 32.44 |
| Hawleyville, Conn., to Southbury | | 9.10 |
| Northern Pacific | | |
| Wyoming, Minn., to Taylors Falls | 20.58 | |
| Pennsylvania-Reading Seashore Lines | | |
| Newfield Branch, Pleasantville, N. J., to Atlantic City (1st track) | 1.42 | |
| Somers Point Branch, Pleasantville, N. J., to Somers Point (1st track) | 0.27 | |
| Rapid City, Black Hills & Western | | |
| Entire line, Rapid City, S. D., to Mystic | | 32.20 |
| Reading | | |
| Kimberton, Pa., to Byers | 6.67 | |
| Lockridge, Pa., to Rittenhouse Gap | 4.34 | |
| Trexlertown, Pa., to Breingsville | 1.76 | |
| St. Louis-San Francisco | | |
| Helm, Mo., to Hancock | 3.26 | |
| Swedeborg, Mo., to St. John | 3.81 | |
| St. Louis Southwestern | | |
| Caraway, Ark., to Rivervale | | 6.00 |
| Southern | | |
| Near Rome, Ga., to Gadsden, Ala. | 24.00 | 24.00 |
| Southern Pacific | | |
| Alpine branch, Ore. (end portion) | 0.05 | |
| Wendling branch, Ore. (end portion) | 2.56 | |
| Coalca, Ore., to Pulp | 0.28 | |
| Coos Bay branch, Cordes, Ore., to North Bend | 0.62 | |
| Karnak branch, Cal. (end portion) | 1.63 | |
| Union branch, Cal. (end portion) | 0.14 | |
| Madera branch, Madera, Cal., end of branch | 0.41 | |
| Near Andover, Cal. | 0.01 | |
| Tonopah & Goldfield | | |
| Entire line, Mina, Nev., to Goldfield | 97.28 | |
| Tonopah & Tidewater | | |
| Entire remaining line, Ludlow, Cal., to Crucero | 25.70 | |
| Union Pacific | | |
| Riverside Junction, Cal., to Crestmore | 2.00 | |
| Youngstown & Southern | | |
| New Galilee, Pa., to Darlington | | 2.00 |
| Columbiana, Ohio, to Leetonia | | 2.82 |
| Total (United States) | 462.70 | 154.14 |
| CANADA | | |
| Canadian National | | |
| Nevis, Alta., to Alix | | 9.21 |
| (Niagara, St. Catharines & Toronto) | | |
| Shriners, Ont., to Stamford | 4.86 | |
| Bridge street, Niagara Falls, Ont. | 0.26 | |
| Queen street, Niagara Falls, Ont. | 0.82 | |
| Victoria and Ferry sts., Niagara Falls, Ont. | 4.65 | |
| Lundys Lane, Ont. | 0.27 | |
| Queenston and St. Paul streets, St. Catharines, Ont. | 1.35 | |
| King street, St. Catharines, Ont. | 0.29 | |
| Ontario street, St. Catharines, Ont. | 0.97 | |
| Total (Canada) | 13.47 | 9.21 |
| MEXICO | | |
| Mexican Pacific | | |
| Kilometer 6.46 to kilometer G-9.79 | 6.21 | |
| Total (Mexico) | 6.21 | |

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As predicted by *Railway Age* last March, gross expenditures for additions and betterments to the fixed properties of the railways reached an estimated total of $350,000,000 in 1948. Reports from practically all the railways of the country to *Railway Age* show that, excluding grade crossing eliminations, the total amount authorized for improvement projects costing more than $100,000 — either completed during 1948 or in progress at its end — was in excess of $365,000,000. Of the latter total, more than $100,000,000 represents those projects which were completed during the year, although not necessarily started after January 1. Not since 1930 has the dollar volume of railway construction been so great.

Although pleased that construction reached this height, many engineering officers of the railways indicate that even higher expenditures would have been desirable. In fact, they probably would have been higher had not the expenditures for equipment taken such a high percentage of the A. & B. dollar. Not since 1935 have gross capital expenditures for roadway and structures equaled those for the purchases of equipment. It is estimated that in 1948 only 25 per cent of capital expenditures were made for roadway purposes.

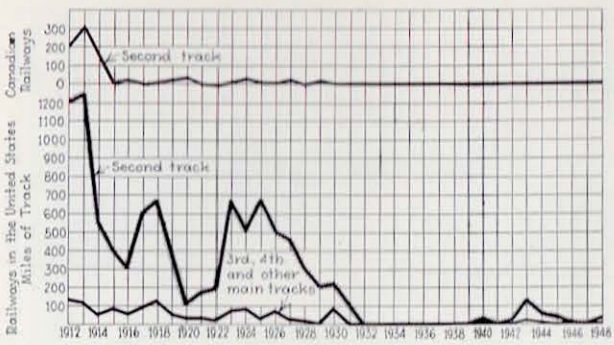
On the other hand, railway management is aware of the need for spending money for improvements to roadway and structures in order to effect the economies that are inherent in most of the new equipment being put into service. This is indicated by the fact that a large percentage of the improvement work in progress during 1948 was complementary to the new equipment purchased or essential to the realization of its increased capacity. Yards and terminals were improved to facilitate the receiving and dispatching of cars; passing sidings were lengthened to accommodate longer trains; and Diesel shops and enginehouses were constructed to service new motive power.

Consistent with this policy, yard and terminal improvements constituted the largest single category of capital improvements in progress during 1948. A total of 77 projects of this character, each costing more than $100,000, were reported, of which 40 were completed during the year. The total cost of 56 of these projects, for which expenditures were given, will be about $75,000,000 — twelve of them involving more than $1,000,000 apiece.

While yard and terminal improvements were jumping from second place in 1947 to first in 1948, in point of both number of projects involved and the amount of money allotted for their completion, signal projects designed to improve the speed and safety of trains on the road moved from third to second place. In this category, a total of 76 projects involving an expenditure of more than $100,000 each were reported. Sixty of these, for which specific cost figures were given, involved a total expenditure of just a little less than $40,000,000. Included in this classification are only those projects involving track work, those that encompass signal work only being covered in an article on signaling elsewhere in this issue.

## Bridge Work Increases

The third largest classification of capital expenditures during 1948 was that of revisions of alinement and grade. Fifty-four projects of this nature costing more than $100,000 each were reported in progress during the year, nine of which are known to have cost more than $1,000,000 apiece. Forty-five of these projects, for which figures were given, cost a total of $35,000,000. Of the total number of revisions under-


Railways in the United States Miles of Track
Canadian Railways
Second track
Second track
3rd, 4th and other main tracks
1912 1914 1916 1918 1920 1922 1924 1926 1928 1930 1932 1934 1936 1938 1940 1942 1944 1946 1948

**Mileage of multiple tracks constructed**

taken, 24 were completed before the end of the year. In spite of such continuing activity in work of this character, the volume was insufficient to keep it from dropping from first place in 1947 to third place last year.

**Miles of New Lines Completed in the United States since 1830**

| Year | Miles | Year | Miles |
|---|---|---|---|
| 1830 | 40 | 1890 | 5,739 |
| 1831 | 99 | 1891 | 4,620 |
| 1832 | 191 | 1892 | 4,648 |
| 1833 | 116 | 1893 | 3,024 |
| 1834 | 214 | 1894 | 1,760 |
| 1835 | 138 | 1895 | 1,420 |
| 1836 | 280 | 1896 | 1,692 |
| 1837 | 348 | 1897 | 2,109 |
| 1838 | 453 | 1898 | 3,265 |
| 1839 | 386 | 1899 | 4,569 |
| 1840 | 491 | 1900 | 4,894 |
| 1841 | 606 | 1901 | 5,368 |
| 1842 | 505 | 1902 | 6,026 |
| 1843 | 288 | 1903 | 5,652 |
| 1844 | 180 | 1904 | 3,832 |
| 1845 | 277 | 1905 | 4,388 |
| 1846 | 333 | 1906 | 5,623 |
| 1847 | 263 | 1907 | 5,212 |
| 1848 | 1,056 | 1908 | 3,214 |
| 1849 | 1,048 | 1909 | 3,748 |
| 1850 | 1,261 | 1910 | 4,122 |
| 1851 | 1,274 | 1911 | 3,066 |
| 1852 | 2,288 | 1912 | 2,997 |
| 1853 | 2,170 | 1913 | 3,071 |
| 1854 | 3,442 | 1914 | 1,532 |
| 1855 | 2,453 | 1915 | 933 |
| 1856 | 1,471 | 1916 | 1,098 |
| 1857 | 2,077 | 1917 | 979 |
| 1858 | 1,966 | 1918 | 721 |
| 1859 | 1,707 | 1919 | 686 |
| 1860 | 1,500 | 1920 | 314 |
| 1861 | 1,016 | 1921 | 475 |
| 1862 | 720 | 1922 | 324 |
| 1863 | 574 | 1923 | 427 |
| 1864 | 947 | 1924 | 579 |
| 1865 | 819 | 1925 | 644 |
| 1866 | 1,404 | 1926 | 1,005 |
| 1867 | 2,541 | 1927 | 779 |
| 1868 | 2,468 | 1928 | 1,025 |
| 1869 | 4,103 | 1929 | 666 |
| 1870 | 5,658 | 1930 | 513 |
| 1871 | 6,660 | 1931 | 748 |
| 1872 | 7,439 | 1932 | 163 |
| 1873 | 5,217 | 1933 | 24 |
| 1874 | 2,584 | 1934 | 76 |
| 1875 | 1,606 | 1935 | 45 |
| 1876 | 2,575 | 1936 | 93 |
| 1877 | 2,280 | 1937 | 148 |
| 1878 | 2,428 | 1938 | 38 |
| 1879 | 5,006 | 1939 | 58 |
| 1880 | 6,876 | 1940 | 26 |
| 1881 | 9,789 | 1941 | 54 |
| 1882 | 11,599 | 1942 | 74 |
| 1883 | 6,819 | 1943 | 56 |
| 1884 | 3,974 | 1944 | 121 |
| 1885 | 3,131 | 1945 | 65 |
| 1886 | 8,400 | 1946 | 68 |
| 1887 | 13,081 | 1947 | 154 |
| 1888 | 7,066 | 1948 | 96 |
| 1889 | 5,707 | | |

Bridge work returned in 1948 to the prominent status it held in previous years, ranking fourth on the basis of reports received. Altogether, there were 77 undertakings in progress costing more than $100,000 each, some involving several structures. Thirty-five of these were completed during the year. The 61 for which costs were reported will involve a total expenditure of more than $29,000,000 when finished.

The construction of Diesel-locomotive shops and terminals, including incidental servicing facilities, involved about the same capital expenditures as in 1947. Of the 44 Diesel facilities reported costing more than $100,000 each, at least 18 were completed before December 31. In addition to these Diesel facilities, 33 engine terminals costing more than $100,000 each were constructed during the year for more effective servicing of steam locomotives.

New mine spurs, industrial tracks and other traffic-developing facilities continued to tap unexploited sources of revenue along many railroads at about the same pace as in 1947. There were in progress during the year 42 projects involving an expenditure of more than $100,000 each — 29 of these being reported as costing a total of $12,000,000. Twenty-seven of them were completed, one of which cost almost $4,000,000.

Building construction, other than engine terminals, continued at what might be called a normal level, confined within limits narrower than its potential by continuing shortages of materials. There were only 30 passenger stations being built or modernized at a cost of over $100,000 each, 20 of which cost a total of about $7,500,000.

The construction or reconstruction of freight stations was far below the need for such improvements. The economies that materials-handling equipment is demonstrating warranted a far greater amount of freight-house work to permit the effective use of such tools. In spite of the need, only 23 freighthouses were in progress of being constructed or rebuilt at a cost of at least $100,000 each. The total amount allotted for this purpose appears to be about the same as last year.

## *Highway Grade Separations*

Grade crossing eliminations continued to increase during 1948, as was expected. Work on the elimination of about 240 grade crossings and the reconstruction of 60 existing crossing structures were in progress during the year. A total of 113 of the structures in progress were completed. Of the number of projects under way, 178 for which costs are available cost a total of $76,000,000. On this basis it is estimated that at least $100,000,000 was allotted to this type of work during the year. It has been said that the major factor tending to keep the amount of grade separation work from soaring was the inability of the various states to secure sufficient engineering personnel to consummate their large highway programs.

Although it was expected that the amount of new track construction in 1948 would be about the same as in 1947, when 154 mi. of new lines were completed, only 96 mi. were actually built. Small as this total was, it exceeded the amount that was constructed in 1946. As was the case in 1947, no very large lines were built, the longest being only 44 mi. In addition to the first track built, 19 mi. of second track were con-

structed. No third or fourth tracks were completed during the year. In Canada a total of 40 mi. of new lines were constructed and put in service during 1948. This compares with 13 mi. in 1947 and one mile in 1946. No new multiple-track work was completed during the last three years.

Following is a detailed report by roads of all grade crossing work undertaken during 1948, as well as of all other construction projects completed during the year, or still in progress at its close, the individual cost of which approached or exceeded $100,000:

## Railway Construction in the United States

*(Figures in parentheses indicate percentage of completion at the end of 1948)*

### Akron, Canton & Youngstown

*Important Work Undertaken:* Construction of a shop for the repair and servicing of Diesel locomotives, Akron, Ohio, $140,000 (100).

### Akron Union Passenger Depot

*Important Work Undertaken:* Construction of passenger station serving the Pennsylvania and Baltimore & Ohio, Akron, Ohio, $2,000,000 (20).

### Alaska

*Important Work Undertaken:* Yard grading and drainage, Anchorage, $187,000 (100); construction of extension to freighthouse, Anchorage, $170,000 (100); construction of an extension to office building, Anchorage, $236,000 (100); dismantling and re-erection of shop building, Anchorage, $384,000 (100); grading and drainage of yard, Fairbanks, $650,000 (70); construction of terminal facilities, Fairbanks, $3,100,000 (33); widening banks at various locations, $4,668,000 (60); construction of six bridges, various locations, $450,000 (80); construction of five barracks, Anchorage, $141,000 (100); construction of Diesel repair shop, Anchorage, $992,000 (10); relaying 94 mi. of heavier rail at various locations, $997,000 (50).

### Angelina & Neches River

*Grade Crossing Eliminations:* Subways: Highway No. 59, at Mile Post 3, cost borne by State of Texas (75).

### Atchison, Topeka & Santa Fe

*Grade Crossing Eliminations:* Overcrossings: Turner, Kan., (100); Sixth street, Atchison, Kan., joint with the Missouri Pacific (40); Riordan, Ariz., replacement of a structure erected in 1933 (70). Subways: Oil Junction, Cal., (100); Stockton, Cal. (100); Stockton, Cal. (100); East Madera, Cal. (75). Reconstruction of Existing Grade Crossing Structures: Extension of present overcrossing, Carlisle road in connection with new hump yard, Argentine, Kan., (100).

*Important Work Undertaken:* Construction of a Fred Harvey commissary, Chicago (100); construction of car washer, Chicago (100); renewal of bridge, Wilbern, Ill. (100); construction of hump yard, Argentine, Kan. (85); remodeling of station, Topeka, Kan. (100); installation of C. T. C., including necessary track changes, South Junction, Wichita, Kan., to Mulvane (100); construction of fueling facilities, Enid, Okla. (100); installation of C. T. C., including necessary track changes, Wellington, Kan., to Oklahoma-Kansas stations (50); installation of a C. T. C. control machine, Clovis, N. M. (100); relocation of double track, Querino Canyon, Ariz. (100); reconstruction of icing, dock and other facilities, Mobest, Ariz. (100); construction of facilities to increase ice manufacturing capacities, Calwa, Cal. (100); construction of ice docks, Mormon, Cal. (100).

(Gulf, Colorado & Santa Fe) *Grade Crossing Eliminations:* Overcrossings: Maglab, Tex. (100); Gainesville, Tex. (50). Subways: Rochelle, Tex. (100).

*Important Work Undertaken:* Relocation of a segment of main track, Wynnewood, Okla. (100); installation of automatic signals, including necessary track work, Buffalo Gap, Tex., to Sweetwater (100).

(Panhandle & Santa Fe) *Grade Crossing Eliminations:* Overcrossings: Monroe, Tex. (100). Subways: Lubbock, Tex. (100).

*Important Work Undertaken:* Installation of C. T. C., including necessary track changes, Kansas state line to Waynoka, Okla. (40); renewal of bridge and reduction of curvature, near Waynoka, Okla. (75); installation of C. T. C., including necessary track changes, Canyon, Tex., to Texico, N. M. (100).

### Atlanta & Saint Andrews Bay

*Important Work Undertaken:* Construction of new yard, including classification tracks, shop, wye tracks, and a new Diesel-locomotive shop, Panama City, Fla., $500,000 (60).

### Atlantic Coast Line

*First Track:* Gainesville, Fla., 0.38 mi.
*Second Track:* Folkston, Ga., to Newell, 8.44 mi.

**Miles of Main Track Built in the United States in 1948**

| States | Number of companies building | First track | Second track | Third track | Fourth track | Total |
|---|---|---|---|---|---|---|
| Arkansas | 1 | 1.26 | .... | .... | .... | 1.26 |
| California | 1 | 0.46 | .... | .... | .... | 0.46 |
| Florida | 1 | 0.38 | 8.44 | .... | .... | 8.82 |
| Iowa | 1 | 4.56 | .... | .... | .... | 4.56 |
| Indiana | 1 | 3.84 | .... | .... | .... | 3.84 |
| Kansas | 1 | 3.98 | .... | .... | .... | 3.98 |
| Kentucky | 2 | 44.03 | 4.00 | .... | .... | 48.03 |
| Louisiana | 1 | .... | 0.81 | .... | .... | 0.81 |
| Maine | 1 | .... | 0.17 | .... | .... | 0.17 |
| Michigan | 1 | .... | 1.17 | .... | .... | 1.17 |
| Missouri | 1 | 4.08 | .... | .... | .... | 4.08 |
| North Carolina | 1 | 2.02 | .... | .... | .... | 2.02 |
| Ohio | 1 | .... | 4.60 | .... | .... | 4.60 |
| Oregon | 1 | 0.89 | .... | .... | .... | 0.89 |
| South Dakota | 1 | 11.60 | .... | .... | .... | 11.60 |
| Virginia | 1 | 9.80 | .... | .... | .... | 9.80 |
| Wisconsin | 1 | 0.58 | .... | .... | .... | 0.58 |
| West Virginia | 1 | 2.19 | .... | .... | .... | 2.19 |
| Wyoming | 1 | 6.63 | .... | .... | .... | 6.63 |
| Totals | | 96.30 | 19.19 | .... | .... | 115.49 |

*New Road Under Construction:* Clewiston, Fla., to Okeelanta, 16.0 mi.

*Grade Crossing Eliminations:* Overcrossings: Pembroke, N. C. (25), Folkston, Ga. (80), both constructed with federal funds.

*Important Work Undertaken:* Relocation of main track and station facilities, Gainesville, Fla., $351,000 (100); construction of incidental track facilities, Achan and Pierce, Fla., $121,466 (100); construction of incidental track facilities, Prairie Junction, Fla., $228,695 (100); changing a passing track from center to outside, Contentnea, N. C., $133,200 (20); changing center passing track to two outside tracks, Selma, N. C., $112,980 (20); reconstruction of bridge over North East Cape Fear river, Castle Hayne,, N. C.. $120,150 (15).

### Atlantic & Yadkin

*Important Work Undertaken:* Reconstruction of Deep River bridge, $107,180 (100).

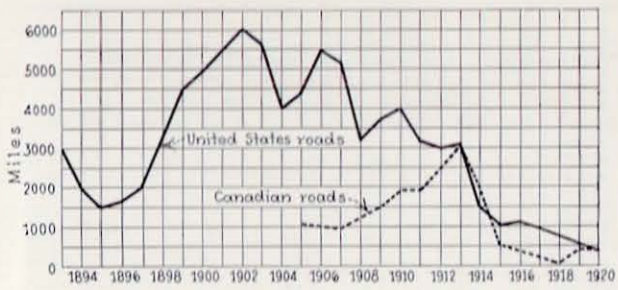
### Baltimore & Ohio

*Grade Crossing Eliminations:* Overcrossings: Grant City-Bay Terrace, Staten Island, N. Y., work started, but later deferred, joint with state, $3,800,000 (20); Georgia avenue, Silver Spring, Md., $95,000 (100); Brady street, DuBois, Pa., $44,000 (100); Cowen, W. Va., $91,700 (100); Hartwell avenue, Cincinnati, Ohio, cost borne by the city, $50,000 (100).

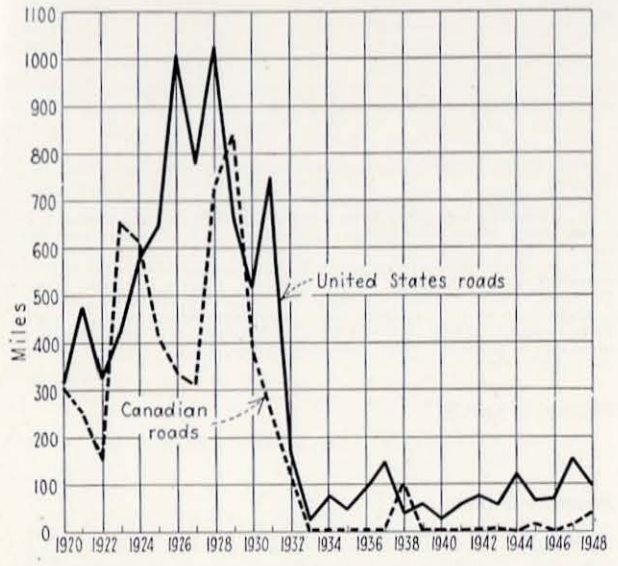
*Important Work Undertaken:* Alterations to building, Baltimore, Md. (started); construction of connection to the Toledo Terminal railroad, Bates, Ohio (100); construction of additional tracks—54th avenue yards, Chicago (100); construction of freighthouse; Chicago (100); rearrangement of track on account of flood wall construction, Cincinnati, Ohio (100); improvement to Mill Creek yard, Cincinnati, Ohio (80); reconstruction of yard and engine-handling facilities, Cone yard, E. St. Louis, Ill. (100); interchange connection, Harvey Junction, Ill. (100); coal-handling facilities, Howland Hook, Staten Island, N. Y. (100); facilities for handling bananas, Locust Point,

**Miles of New Lines Completed in Canada Since 1904**

| Year | Miles | Year | Miles |
|---|---|---|---|
| 1904 | 316 | 1927 | 310 |
| 1905 | 1,181 | 1928 | 723 |
| 1906 | 1,007 | 1929 | 841 |
| 1907 | 976 | 1930 | 385 |
| 1908 | 1,249 | 1931 | 250 |
| 1909 | 1,488 | 1932 | 121 |
| 1910 | 1,844 | 1933 | 0 |
| 1911 | 1,898 | 1934 | 1 |
| 1912 | 2,232 | 1935 | 2 |
| 1913 | 3,013 | 1936 | 1 |
| 1914 | 1,978 | 1937 | 0 |
| 1915 | 718 | 1938 | 101 |
| 1916 | 290 | 1939 | 1 |
| 1917 | 270 | 1940 | 2 |
| 1918 | 135 | 1941 | 1 |
| 1919 | 433 | 1942 | 1 |
| 1920 | 305 | 1943 | 3 |
| 1921 | 252 | 1944 | 0 |
| 1922 | 145 | 1945 | 15 |
| 1923 | 655 | 1946 | 0 |
| 1924 | 615 | 1947 | 13 |
| 1925 | 414 | 1948 | 40 |
| 1926 | 335 | | |




**Mileage of new lines constructed in the United States and Canada, 1893 to 1920**




**Mileage of new lines constructed in the United States and Canada, 1920 to 1948**

Md. (100); facilities for handling bulk sulphate, Locust Point, Md. (100); elevators, Locust Point, Md. (100); interchange tracks, Lorain, Ohio (100); rest house, New Castle Junction, Ohio (100); Elk Creek spur, Overfield, W. Va. (100); flood wall, Parkersburg, W. Va. (100); new yard, Parma, Ohio (started); flood protection facilities, Portsmouth, Ohio (50); siding facilities, Renick, Ohio (100); relocation of railroad facilities, account of Municipal Ferry terminal, St. George, Staten Island, N. Y. (100); additional mine tracks, Triadelphia, W. Va. (100); division office building, Washington, Ind. (100); installation of car retarders in hump yard, Willard, Ohio (100); Diesel-locomotive servicing and maintenance facilities, 12 locations (started); improvements to 41 bridges (started). Total estimated cost of these projects $18,000,000.

### Central of New Jersey

*Important Work Undertaken:* Remodeling portion of locomotive erection shop and car shop for use as Diesel-locomotive repair shop, Elizabethport, N. J., $387,466 (50); renewal of counterweight cables, Newark Bay bridge, Bayonne and Elizabethport, N. J., $135,000 (100); renewal of six-track superstructure of bridges over Linnet and Broadway streets, Bayonne, N. J., $590,000 (100).

### Bessemer & Lake Erie

*Grade Crossing Eliminations:* Overcrossings: Harmonsburg, Pa., work performed by Pennsylvania highway department with federal funds, $137,200 (100).

### Birmingham Southern

*Important Work Undertaken:* Car-repair shop building, including tracks and necessary machinery, 34th Street, Ensley, Birmingham, Ala., $115,000 (started).

### Boston & Maine

*Grade Crossing Eliminations:* Overcrossings: Daniel Webster highway, Meredith, N. H., constructed by the state with part of funds provided by the federal government, $128,000 (100). Highways closed: Hanson's crossing, Madbury, N. H., $100 (100); Ten Rod road, Rochester, N. H., $100 (100); Forristall crossing, Troy, N. H., $100 (100); barriers erected by railroad in each case.

*Important Work Undertaken:* Installation of automatic block signals, C. T. C. and incidental track changes, Lowell Junction, Mass., to Willows, $1,000,000 (100); alterations to power plant, including the installation of two new boilers and stokers, Mechanicville, N. Y., $161,000 (100); alterations to power plant, including new boilers, thawing shed and new steam line, Concord, N. H., $185,000 (100); installation of automatic block signals, C. T. C., including electric interlocking and necessary track changes, Johnsonville, N. Y., to Troy, $247,000 (10).

### Canton

*Important Work Undertaken:* Construction of new Diesel enginehouse, Canton, Baltimore, Md., including concrete pits, cranes and an incidental building, $120,000 (10).

### Canadian National

(Grand Trunk Western)

*Second Track:* Mile Post 29.09 to Mile Post 30.26, near Pontiac, Mich., 1.17 mi.

*Grade Crossing Eliminations:* Subways: John C. Lodge expressway, Detroit, Mich., constructed by Wayne County board of road commissioners, all cost borne by public authorities, Detroit, Mich., $350,000 (15).

*Important Work Undertaken:* Construction of a steel-frame and brick passenger station, and alterations to existing yard office, including platforms, driveway, and station siding, Grand Rapids, Mich., $237,000 (100)

### Central of Georgia

*Grade Crossing Eliminations:* Overcrossings: Gordon, Ga., constructed by state with federal funds, $50,000 (started); Goodwater, Ala., constructed by state with federal funds, $30,000 (100). Subways: Buchanan, Ga., built by the state with federal funds, $80,000 (100).

### Chesapeake & Ohio

(Chesapeake District) *First Track:* Kentucky state line near Jenkins, Ky., to Meade, Va., 9.80 mi.; Jenkins, Ky., to Virginia state line, 4.43 mi.; Wayland, Ky., to Deane, 23 mi.

*Second Track:* Maidens, Va., to Irwin, 4 mi.

*New Road Under Construction:* Clothier, W. Va., to near Selbe, 7.20 mi.; Holden, W. Va., to end of line, 5.93 mi.; Carver, Ky., to end of line, 15.70 mi.

*Grade Crossing Eliminations:* Overcrossings: Bluestone, Ky., $188,500 (100); Dock, W. Va., cost unknown (70); overhead crossing in connection with highway bridge over James river, Westham, Va., cost unknown (10).

*Important Work Undertaken:* Rehabilitation and modernization of toilets in passenger stations over entire system, $264,350 (99); construction of low-level coal pier, including tracks, Newport News, Va., $8,059,500 (75); widening of track centers, construction of caboose track and installation of scales, Fulton, Va., $140,100 (started); replacement of eight pedestals in Richmond viaduct, Richmond, Va., $119,000 (74); replacement of steel pin spans, construction of additional concrete piers and repairs to old piers in Richmond viaduct, from 14th street to Tredegar street, Richmond, Va., $$2,807,000 (30); replacement of steel spans in three bridges, Richmond, Va., $262,000 (started); revision of alinement, including a new station, Keswick, Va., $167,300 (99); rearrangement and respacing of signals, including necessary track work, over entire system, $150,900 (97); rearrangement of signals to provide adequate stopping distance, Richmond, Va., to Gordonsville, and from Orange, Va., to Clifton Forge, $114,300 (65); installation of C. T. C., including necessary changes in track and water supply, Balcony Falls, Va., to Iron Gate, $456,300 (48); remodeling of passenger station, extension of track, and installation of signals, Charlottesville, Va., $540,200 (47); replacement of Union depot, construction of water tank and rebuilding of bridge, Waynesboro, Va., $476,700 (10); revision of alinement, Low Moor, Va., $130,900 (3); extension of switching lead and construction of set-off track, Covington, Va., $177,800 (99); revision of alinement, and construction of new tunnel, Fort Spring, W. Va., $2,254,500 (99); revision of alinement, Lowell, W. Va., $449,620 (92); replacement of 115-ft. turntable with 130 ft., Hinton, W. Va., $154,400 (started); extension of two stalls of enginehouse, and the installation of an electrically operated driving-wheel drop-pit table, Hinton, W. Va., $106,720 (3); revision of alinement to eliminate switchbacks, Claypool, W. Va., to Meadow Bridge, $1,183,000 (30); reconstruction of bridge abutment, Guyandot, W. Va., $132,000 (started); construction of an additional freight main track and two additional yard tracks, Huntington, W. Va., $880,800 (90); construction of tracks to serve coal washing plant and river terminal, Ceredo, W. Va., $1,046,300 (99); construction of approaches to bridge over Big Sandy river, Kenova, W. Va., to Big Sandy Junction, Ky., $1,124,100 (6); construction of additional tracks in River yard, Ashland, Ky., $151,825 (70); installation of interlocked switches at PD cabin, Logan, W. Va., and installation of C. T. C., including necessary track changes, PD cabin, to Monitor Junction, W. Va., $141,400 (started); rearrangement and extension of yard, including the construction of an office building, Danville, W. Va., $701,000 (70); construction of tracks to serve coal mine, Barrett, W. Va., $770,265 (95); construction of tracks to serve coal mine, West Virginia No. 2, W. Va., $106,200 (95); construction of tracks to serve coal mine, Stowe, W. Va., $158,150 (80); connect adjacent passing tracks, Offutt, Ky., to Bobbs, $321,000 (95); installation of C. T. C., including necessary track changes, Beaver Junction, Ky., to Shelby, $337,700 (started); construction of improvements to yard and engine terminal, Shelby, Ky., $1,192,000 (93); construction of tracks to serve coal mine, Gearheart, Ky., $371,000 (80); construction of tracks to serve coal mine, Myra, Ky., $427,600 (94); installation of C.T.C., Big

Sandy Junction, Ky., to Beaver Junction, including the extension and construction of passing track, installation of automatic color-light signals, Big Sandy Junction, Ky., to Elkhorn City, and installation of reverse signals, Kise, Ky., to Richardson, $1,213,762 (98); construction of addition to enginehouse, including the installation of drop-tables and an additional engine hoist, Russell, Ky., $220,700 (95); construction of a Y.M.C.A. building, Russell, Ky., $583,700 (30); construction of 10 additional stalls in enginehouse, Russell, Ky., $589,000 (10); enlarge the westbound classification and receiving yards, Russell, Ky., $5,070,000 (52); install a 130-ft. and a 115-ft. turntable, Russell, Ky., $236,900 (started); installation of C. T. C., including the extension to a bridge, an addition to an interlocking tower, and the construction of a 160-car set-off track, Russell, Ky., to Limeville, $711,050 (25); reconstruction and extension of bridge, Augusta, Ky., $122,400 (started); construction of passenger station, and remodeling of freighthouse, Newport, Ky., $310,200 (started); reconstruction of bridge as a deck plate-girder viaduct, Brighton, Ohio, $500,000 (15); construction of coaling and water station, GB Cabin, Ohio, $279,400 (99); installation of remote-controlled power switches and signals at passing tracks, including track work, Limeville, Ky., to Parsons, Ohio, $559,125 (90); installation of remote controlled power switches and signals at passing tracks, including necessary track work, Columbus, Ohio, to Cummings, $1,022,475 (10); installation of a 130-ft. turnable at Parsons, Ohio, a 115-ft. turntable at Marion, and a 100-ft. turntable at Pomeroy, $307,300 (started); construction of additional yard tracks, Parsons, Ohio, $876,100 (94); installation of interlocking facilities with the B. & O., N. Y. C. and N. Y. C. & St. L., including flasher signals and necessary track work, Fostoria, Ohio, $165,000 (30); extend enginehouse, replace sandhouse, and rearrange track, Walbridge, Ohio, $261,900 (50); fill 140 ft. of bridge, replace balance with 40-ft. steel span over highway and four steel spans over creek, Miami, Ohio, $151,120 (started); replacement of bridge, Richmond, Ind., $150,500 (started); rearrange and enlarge barney and return yards, pier No. 9, install mules and replace 20th Street bridge with pedestrian underpass, Newport News, Va., $412,200 (100); installation of automatic sprinklers, fire curtains, etc., under pier deck, Newport News, Va., $195,300 (100); construction of eight cinder block warehouses, including sprinkler system, Newport News, Va., $446,000 (100); construction of 18 additional storage tracks, Newport News, Va., $128,600 (100); construction of 16 cinder block warehouses and sprinkler system, Morrison, Va., $638,500 (100); construction of 18 storage tracks, and an additional track in eastbound yard, Gladstone, Va., $453,200 (100); construct second track, Maidens, Va., to Irwin, $233,400 (100); revision of alinement, Goshen, Va., $214,375 (100); revision of alinement between Millboro, Va., and Lick Run tunnels, and also at Thorny Run, $208,910 (100); revision of alinement, including the conversion of Mason tunnel into an open cut, Millboro, Va. $160,450 (100); revision of alinement, Longdale, Va., $179,500 (100); revision of alinement, North Mountain to Augusta Springs, Va., $824,300 (100); revision of alinement, Craigsville, Va. $191,400 (100); revision of alinement, Griffith, Va., $392,800 (100); construction of additional yard track, Handley, W. Va., $183,600 (100); construction of a double switching lead, Clifton Forge, Va., $285,000 (100); installation of C. T. C. between St. Albans, W. Va., and McCorkle, and between Sproul, W. Va., and Brounland, including the construction of a yard office building, at St. Albans, $378,175, (100); construction of tracks for coal mine, Emmett, W. Va., $237,265 (100); construction of tracks for coal mine, Wilber, W. Va., $347,000 (100); construction of tracks to serve coal mine, Argonne, W. Va., $480,320 (100); installation of C. T. C., including necessary track changes, Aden, Ky., to Olive Hill, $134,000 (100); installation of automatic signals, including necessary track work, Ashland, Ky., to Lexington, $488,270 (100); construction of tracks to serve coal mine, White House, Ky., $185,200 (100); construction of a concrete coaling station, to replace a frame structure, including the erection of a water tank, Paintsville, Ky., $193,500 (100); construction of a passing track, Pauley, Ky., $121,300 (100); construction of a concrete coaling station to replace a frame structure, Martin, Ky., $109,500 (100); construction of tracks to serve coal mine, Meade Fork, Va., $234,400 (100); extension of tracks in Yards 1 and 4, Stevens, Ky., $251,425 (100); rearrangement of tracks, and the construction of a shop building, including concrete truckways, Russell, Ky., $244,700 (100); extension of shop building, installation of machinery and equipment, Russell, Ky., $834,000 (100); replacement of bridge, Richmond, Ind., $190,000 (100); installation of switch mechanisms, with facing-point locks, center-lever locking, main-track crossovers in automatic block signal territory, including necessary track work, over the entire system, $137,800 (100); construction of water station and blowoff pit, Powell wye, Ohio, $113,800 (100); construction of a caboose and two hump receiving tracks, 15 additional receiving tracks, and car retarder, Walbridge, Ohio, $1,149,870 (100); installation of car retarders, floodlights, loud-speaker system, retarder towers, and the construction of a shop building, Walbridge, Ohio, $1,328,270 (100).

(Pere Marquette district) *Grade Crossing Eliminations*: Overcrossings: Holland, Mich., relocation of state highway 37, with state and federal funds, $269,000 (100). Subways: Herbert street, Detroit, Mich., Edsel Ford expressway, with federal and state funds, $446,000 (100); East Paris, Mich., relocation of state highway 37, with state and federal funds, $320,000 (100); Fort and Jefferson connection, Detroit, Mich., with city, state and federal funds, $657,000 (100); Bay View, Mich., relocation of U. S. highway 31, with state and federal funds, $228,000 (100).

### Chicago & Eastern Illinois

*Important Work Undertaken*: Modernization of power plant, including the installation of a new stoker-fired boiler, coal and ash-handling equipment and additional generator, Danville, Ill., $232,000 (90).

### Chicago & Illinois Midland

*Important Work Undertaken*: Construction of 2½-mi. belt line including 131-lb. rail, construction of a new station, absolute permissive block signals, and a manually-operated interlocking plant, Havana, Ill., $300,000 (10); replacement of a 300-ft. open-deck, steel girder bridge, with a ballasted-deck bridge on concrete piers, $150,000 (100).

### Chicago, Burlington & Quincy

*Grade Crossing Eliminations*: Overcrossings: two locations in Tecumseh, Neb., $82,000 (100); Norway, Neb., $60,000 (100).

*Important Work Undertaken*: Revision of alinement, Clarence, Mo., to Bevier, $495,180 (80); rearrangement of yard facilities, Daytons Bluff, Minn., $848,700 (65) three line changes, Chillicotae, Avery and Frederic, Iowa, $1,280,101 (75); replacement of yard office, St. Joseph, Mo., $113,258 (80); rearrangement of yard tracks and the construction of concrete roadways, North Kansas City, Mo., $107,501 (95); construction of bank-protection facilities, Burlington, Iowa, to St. Louis, Mo., $151,941 (75); revision of grade and improvement of drainage conditions, Amazonia, Mo., $107,938 (25); construction of an addition to a warehouse, Peoria, Ill., $210,465 (10); construction of track to serve coal mine, Astoria, Ill., $466,262 (100); revision of grade, Callao, Mo., $292,988 (100); revision of grade and reduction of curvature, Kissinger, Mo., $140,887 (75); construction of flood protection facilities, Sterling, Neb., to Lancaster, $179,655 (20); rearrangement and respacing of signals, including necessary track work, Cushman, Neb., to Grand Island, $111,565 (100); relocation of main track on account of the construction of Boysen dam, Boysen, Wyo., $652,454 (50); stabilization of a high fill, Vermont, Ill., $232,327 (100); relocation of main track in connection with Harlan County Dam project, Republican, Neb., to Long Island, Kan., $938,808 (70); installation of C. T. C., including necessary track changes, Old Monroe, Mo., to Machens, $430,966 (100); installation of C. T. C., including necessary track changes, Balfour, Iowa, to Pacific Junction, $355,467 (50); revision of alinement, Daggetts, Ill., $496,445 (100); revision of alinement of the main line, and alteration to yard, Beardstown, Ill., $285,504 (100); rearrangement of Murray yard, North Kansas City, Mo., $1,597,584 (90); rearrangement of classification yard, Kansas City, Mo., $156,546 (90); revision of grade, Mark, Mo., $167,024 (75); revision of grade, Cullom, Neb., $220,273 (100); revision of grade and reduction of curvature, Plattsmouth, Neb., $214,310 (100).

### Chicago, Indianapolis & Louisville

*First Track*: Armour, Ind., to Creston, 3.84 mi.

*Important Work Undertaken*: Reconstruction of bridge over Wabash river, involving the installation of 7 additional piers, and 13 deck plate-girder spans, to replace 7 obsolete through-truss spans, Delphi, Ind., $300,000 (15); reconstruction of existing locomotive shop for repair of Diesel locomotives, including facilities for storage and reclamation of lubricating oil and fire protection, Lafayette, Ind., $190,000 (90); construction of Diesel fuel storage and servicing facilities, providing for the storage of 1,010,000 gal. of fuel oil, at various points on line, $105,000 (75).

### Chicago, Milwaukee, St. Paul & Pacific

*Grade Crossing Eliminations*: Overcrossings: Near Richland, Iowa, constructed with federal funds, $100,000 (100); Avery, Idaho, concrete arch constructed by and at the expense of U. S. Forest Service, $75,000 (100). Subways: Cedar avenue, Minneapolis, Minn., constructed with federal, state and railroad funds, $1,146,000 (3); Willow road near Techny, Ill., constructed with motor fuel tax funds, $300,000 (1); West Allis, Wis., constructed with state and railroad funds, $75,000 (100).

*Important Work Undertaken*: Enlargement of West yard to provide additional classification and storage facilities at Milwaukee, Wis., $400,000 (100); remodeling of west approach to draw span over Menominee river and construction of pier protection, Milwaukee, Wis., $148,000 (100); construction of temporary bridge for Cedar street grade separation project, Minneapolis, Minn., $110,000 (100); alteration of powerhouse and installation of boilers, Milwaukee, Wis., $500,000 (100); wheel-shop addition to present building, Milwaukee, Wis., $165,000 (100); rest pier for drawbridge, Green Bay, Wis., $140,000 (90); alterations and additions to passenger station facilities, Sioux City, Iowa, $225,000 (30); construction of Diesel servicing facilities, Milwaukee, Wis., $1,000,000 (25).

### Chicago, Rock Island & Pacific

*First Track*: McPherson, Kan., (relocation) 3.98 mi.; at Numa, Iowa, (relocation) 4.56 mi.

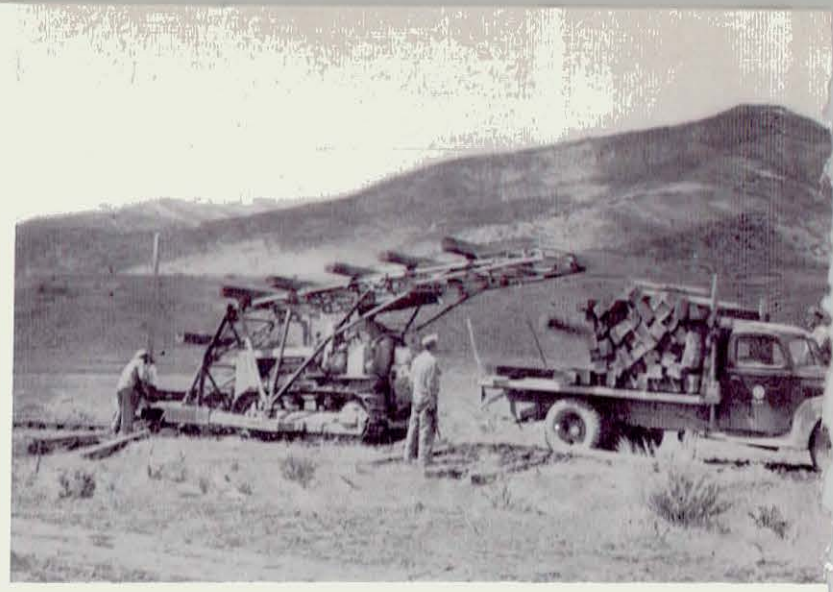
*Grade Crossing Eliminations*: Overcrossings: Peoria, Ill., constructed by state, $40,000 (100); Roosevelt road, Little Rock, Ark., under construction by state, $70,000 (65); highway K-10, Paxico, Kan., under construction by state, $38,000 (15); Ola, Ark., under construction by state $65,000 (65); Highway 7, under construction by the state, Pleasant Hill, Mo., $217,000 (25). Subways: U. S. Highway 6, 159th street, Oak Forest, Ill., under construction by the state, $356,400 (100). Revision of Highway: Relocation of U. S. 81, McPherson, Kan., under construction by the state, $185,300 (100).

*Important Work Undertaken*: Construction of new hump yard, including car retarders, Armourdale, Kan., $2,000,000 (75); construction of 12,706-ft. lead track for industrial developments, including a freighthouse, Dallas, Tex., $197,840 (100); construction of a new dust collector system for grain elevator, Armourdale, Kan., $111,000 (80); reduction of grade to 0.75 per cent for 1.7 mi., Letts, Iowa, $203,065 (100); construction of Diesel-locomotive shop in erection shop, Silvis, Ill., $193,603 (100); construction of new yards, Ft. Worth, Tex., $191,542 (100).

### Chicago & North Western

*First Track*: Belle Fourche, S. D., northwesterly to mining area 11.60 mi.; from the South Dakota state line to mining area in Wyoming, 6.63 mi.

(*Continued on page* 244)



Salvage in the modern manner — A Caterpillar tractor equipped with a specially built tie loader picking up usable ties on the line of the D. & R. G. W. between Moroni, Utah, and Nephi as it was being taken up this year

# ABANDONMENTS DECLINE SLIGHTLY IN 1948

By HENRY E. MICHAEL
Associate Editor

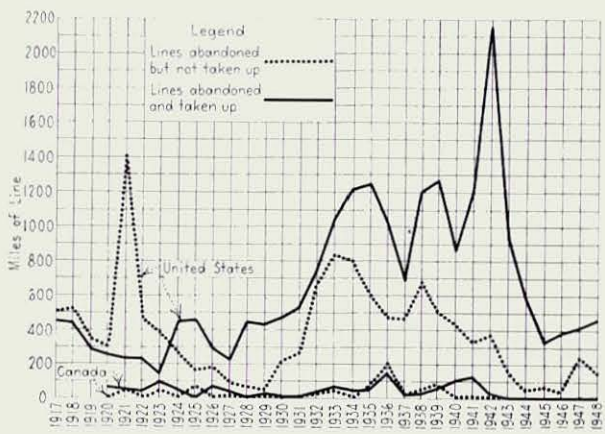
In testifying recently in a rate case before the Interstate Commerce Commission, Ralph Budd, president of the Burlington, aptly stated that "we haven't abandoned people on branch lines until they've abandoned us." No more concrete proof of the truth of this statement could be found than in the stories behind the abandonment in 1948 of 617 mi. of lines. Excluding the numerous small abandonments resulting from revisions of grade and alinement, those few in which duplication of facilities were involved, and the cases of lines so badly damaged by floods that rehabilitation was too expensive to be warranted, all the lines officially discontinued during the year had long since been abandoned by practically all of their previous customers.

Included in the total mileage of lines abandoned in the United States during the past year were 463 mi. taken up and 154 mi. on which service has been discontinued pending the removal of the track. The 617 mi. thus abandoned increased the amount of line that has disappeared since 1916 to 33,095 mi. During the last nine years of this period 80 entire railroads have been abandoned, including two that were formerly Class I roads. In Canada, 23 mi. were abandoned—10 more than last year—while in Mexico six miles were discontinued.

The largest individual abandonment in 1948 was that of the Tonopah & Goldfield, extending 97.28 mi. between Mina, Nev., and Goldfield. The next longest abandonment was the 48-mi. line of the Southern, from Rome, Ga., to a point two miles east of Gadsden, Ala. After examining the application for the abandonment of this line, Examiner J. S. Prichard of the Interstate Commerce Commission observed, "the situation presented in this case is that of a line of railroad 50 mi. long, lightly constructed and operated at a considerable loss, primarily for the benefit of a few small communities, the largest of which has only 600 inhabitants." To operate this line for the benefit of these people, the Southern incurred out-of-pocket losses which averaged $59,019 annually for the years 1944-46, inclusive.

The third largest abandonment in point of mileage was that of the New York, New Haven & Hartford between Hawleyville, Conn., and Litchfield, 32.44 mi. In authorizing the discontinuance of this line, the I. C. C. took cognizance of the fact that all points on the territory involved can be served by motor carrier. The line had been operating at a loss, and to continue its operation an unreasonable amount of money would have had to be spent to rehabilitate the track and structures. In the abandonment proceedings, insufficient evidence was shown that, after such rehabilitation, the line could be operated at a profit.

In fourth place, with respect to mileage involved, was the entire line of the Rapid City, Black Hills & Western, extending between Rapid City, S. D., and Mystic, a distance of 32.2 mi. In recommending that the line be abandoned, I. C. C. Examiner P. C. Albus stated that the applicant was without necessary resources to rehabilitate the line in order to provide a "reasonable degree of safety." Furthermore, the report indicated that if the proposed abandonment were permitted the transportation needs of the territory served by the Rapid City are "amply provided" by the




Lines abandoned in the United States and Canada — 1917 to 1948, inclusive

Chicago & North Western and the Chicago, Milwaukee, St. Paul & Pacific, in addition to common carrier bus and truck transportation. Prior to granting the abandonment authority, the I. C. C. stated that the condition of the line limited the speed of trains to 10 m.p.h.

Six entire railways were abandoned in 1948, the longest of which was the Tonopah & Goldfield, previously mentioned. The next largest was the Rapid City, Black Hills & Western, also noted. The third largest was the 28.99 mi. of the Bingham & Garfield, extending from Bingham, Utah, to Garfield. This line was a wholly owned subsidiary of the Kennecott Copper Corporation, which was the principal user of the facility. Prior to the abandonment of the line the parent corporation put into service a 14-mi. plant-facility electric-traction line to handle its transportation needs more effectively. The B. & G. traffic which is not handled by this new line can be accommodated by the Denver & Rio Grande Western, which acquired a 1.9-mi. segment of the B. & G. to serve the American Smelting & Refining Co.

### *T. & T. Abandonment Completed*

The fourth longest entire line abandoned during 1948 was the remaining 25.7-mi. portion of the Tonopah & Tidewater, between Ludlow, Cal., and Crucero. Authority had been given in 1946 to abandon the entire 169-mi. line of the Tonopah & Tidewater from Ludlow, Cal., to Beatty, Nev. No traffic had moved over the line since 1940, and in 1942 the War Department requisitioned the rail and other steel for use in the war effort. That part of the line between Crucero, Cal., and Beatty, Nev., was taken up at that time. The line was built originally to serve borax deposits which were abandoned several years ago. In authorizing the abandonment the I. C. C. stated, "it is apparent from the record that the line has served the purpose for which it was built, and that reconstruction of the line and resumption of service would impose an undue and unnecessary burden upon the applicants and upon interstate commerce."

The other two entire lines abandoned were the Flint River & Northeastern, reaching 23.03 mi. between Pelham, Ga., and Tichnor; and the Clarion River, 11.06 mi., extending between Hallton, Pa., and Carman. The need for this latter road vanished when the Susquehanna Corporation abandoned the operation of its chemical plant at Hallton. These abandonments compare with three entire roads abandoned in 1946, four in 1945, eight in 1944, and three in 1943. Fourteen roads were discontinued in 1942, 14 in 1941, and 13 in 1940. Thus, with the 17 in 1939, a total of 84 roads passed out of existence in the ten-year period now ended.

These statistics include, for each year, all lines abandoned during the year, regardless of whether the tracks were removed or not. Should the tracks not be taken up during the year they are not included in the later reports when they are actually removed.

Since records of abandonments were started in 1917, mileages have ranged each year from the low of 282 mi. in 1927 to the high of 2,515 mi. in 1942. Between 1917 and 1948, inclusive, a total of 33,095 mi. of track have been abandoned. During this same 32-year period

**Mileage Abandoned by States in 1948 and Accumulated Total Since 1931**

| States | Mileage abandoned in 1948 | Accumulated abandonments since 1931 (miles) |
|---|---|---|
| Alaska | .... | 216.47 |
| Alabama | 23.00 | 314.62 |
| Arizona | .... | 205.89 |
| Arkansas | 10.16 | 473.83 |
| California | 29.89 | 1152.89 |
| Colorado | .... | 742.33 |
| Connecticut | 41.54 | 171.29 |
| Delaware | .... | 37.11 |
| Florida | 3.09 | 779.27 |
| Georgia | 109.16 | 626.74 |
| Idaho | .... | 233.18 |
| Illinois | 3.37 | 706.85 |
| Indiana | 3.81 | 189.51 |
| Iowa | 12.40 | 1041.76 |
| Kansas | 4.55 | 862.28 |
| Kentucky | 6.07 | 400.88 |
| Louisiana | .... | 446.28 |
| Maine | .... | 211.79 |
| Maryland | .... | 96.70 |
| Massachusetts | 0.10 | 285.90 |
| Michigan | 10.73 | 1167.05 |
| Minnesota | 34.25 | 452.05 |
| Mississippi | 31.35 | 330.94 |
| Missouri | 11.03 | 1115.16 |
| Montana | .... | 151.00 |
| Nebraska | .... | 381.72 |
| Nevada | 97.28 | 404.57 |
| New Hampshire | 9.35 | 238.54 |
| New Jersey | 2.33 | 237.58 |
| New Mexico | .... | 333.69 |
| New York | 15.50 | 705.43 |
| North Carolina | 9.50 | 366.76 |
| North Dakota | .... | 49.52 |
| Ohio | 2.82 | 291.05 |
| Oklahoma | .... | 717.98 |
| Oregon | 3.51 | 340.71 |
| Pennsylvania | 46.23 | 1117.75 |
| Rhode Island | .... | 23.09 |
| South Carolina | .... | 341.15 |
| South Dakota | 32.20 | 268.34 |
| Tennessee | .... | 481.00 |
| Texas | .... | 1431.34 |
| Utah | 51.91 | 394.49 |
| Vermont | 10.00 | 83.41 |
| Virginia | 1.71 | 443.60 |
| Washington | .... | 359.17 |
| West Virginia | .... | 317.60 |
| Wisconsin | .... | 797.44 |
| Wyoming | .... | 128.02 |
| Total | 616.84 | 22,665.72 |

**Mileage Abandoned by Regions in 1948 and Accumulated Total Since 1931**

| | Mileage abandoned in 1948 | Accumulated abandonments since 1931 (miles) |
|---|---|---|
| New England states | 60.99 | 1014.02 |
| North Atlantic states | 64.06 | 2194.57 |
| Southeastern states | 183.88 | 4402.56 |
| Middle Western states | 71.93 | 5889.71 |
| Northwestern states | 32.20 | 1572.39 |
| Southwestern states | 118.47 | 5128.74 |
| Rocky Mountain-Pacific Coast states | 85.31 | 2247.26 |
| Alaska | .... | 216.47 |
| Total | 616.84 | 22,665.72 |

**Miles of Lines Abandoned in the United States Since 1916**

| Year | Miles | Year | Miles |
|---|---|---|---|
| 1917 | 942 | 1933 | 1,876 |
| 1918 | 959 | 1934 | 1,995 |
| 1919 | 637 | 1935 | 1,843 |
| 1920 | 536 | 1936 | 1,523 |
| 1921 | 1,626 | 1937 | 1,140 |
| 1922 | 677 | 1938 | 1,897 |
| 1923 | 513 | 1939 | 1,783 |
| 1924 | 693 | 1940 | 1,299 |
| 1925 | 606 | 1941 | 1,509 |
| 1926 | 457 | 1942 | 2,516 |
| 1927 | 282 | 1943 | 1,096 |
| 1928 | 512 | 1944 | 640 |
| 1929 | 475 | 1945 | 412 |
| 1930 | 694 | 1946 | 423 |
| 1931 | 795 | 1947 | 670 |
| 1932 | 1,452 | 1948 | 617 |

only 11,234 mi. of new lines have been constructed, resulting in a net decrease of 21,861 mi. in the total mileage of the railways of the country. This is an average net reduction of about 683 mi. per year.

Georgia had the largest total miles of line abandoned in 1948—109.16 mi.; Nevada ranked second with 97.28 mi. abandoned; Utah was third with 51.91 mi.; while Pennsylvania with 46.23 mi. was in fourth place. The three states having the largest total abandonments during the 17-year period ended with 1948 continued to hold the same relative rank as they did in 1945, 1946 and 1947. However, the fourth place ranking changed in 1948 by virtue of Pennsylvania displacing Missouri. Texas continued to lead all states with 1,431.34 mi. abandoned in the period, although no lines were discontinued in 1948; Michigan was second with 1,167.05 mi.; California was third with 1,152.89 mi.; and Pennsylvania was fourth with 1,117.75 mi.

The abandonments in the various regions in the United States, both during the past year and accumulated totals for the period between 1932 and 1927, inclusive, are shown in an accompanying table.

A total of 23 mi. of line were abandoned in Canada during 1948 to bring the total since 1932 to 1,241 mi. In that period Canadian abandonments have ranged between 11 and 399 mi. per year, except for 1943, when less than one mile was discontinued, and in 1945 when no lines were abandoned.

## Lines Abandoned in the United States, Canada and Mexico in 1948

| | Lines abandoned and taken up (miles) | Lines abandoned but not yet taken up (miles) |
|---|---|---|
| UNITED STATES | | |
| Atlantic & Carolina | | |
| Warsaw, N. C., to Kenansville | | 9.50 |
| Atlantic Coast Line | | |
| Anguilla, Ga., to Southern Junction | 6.13 | |
| Oak Ridge branch, Fla. | 3.09 | |
| Bingham & Garfield | | |
| Entire line, Bingham, Utah to Garfield | 28.89 | |
| Central of New Jersey | | |
| East end Hackensack River bridge, Jersey City, N. J., to west end Hackensack River bridge, Kearny, N. J. | | 0.64 |
| Chicago, Indianapolis & Louisville | | |
| Armour, Ind., to Creston (relocation) | 3.81 | |
| Chicago, Milwaukee, St. Paul and Pacific | | |
| Reno, Minn., to Isinours | 13.67 | |
| Chicago, Rock Island & Pacific | | |
| At McPherson, Kan. | 4.55 | |
| At Numa, Iowa | 4.73 | |
| Clarion River | | |
| Entire line, Hallton, Pa., to Carman | | 11.06 |
| Denver & Rio Grande Western | | |
| Moroni, Utah, to Nephi | 23.02 | |
| Des Moines Union | | |
| Des Moines, Iowa, South yard | 0.30 | |
| Detroit, Caro & Sandusky | | |
| Peck, Mich., to Sandusky | 10.73 | |
| Erie | | |
| Hillside Junction, Scranton, Pa., to River street | 5.32 | |
| Flint River & Northeastern | | |
| Entire line, Pelham, Ga., to Tichnor | 23.03 | |
| Gainesville Midland | | |
| Belmont, Ga., to Monroe | 32.00 | |
| Grasse River | | |
| West yard, Conifer, N. Y., to Cranberry Lake | 13.20 | |
| Illinois Central | | |
| Greenwood, Miss., to Grenada | 31.35 | |
| Interstate | | |
| Dorchester, Va., to Sutherland | 1.71 | |
| Lehigh & New England | | |
| Wind Gap, Pa., to Pen Argyl | | 0.87 |
| Louisville & Nashville | | |
| Maloney, Ky., to Fincastle | 6.07 | |
| Maine Central | | |
| Coos Junction, N. H., to North Stratford, Vt. | | 19.35 |
| Minneapolis & St. Louis | | |
| Corwith, Iowa, to St. Benedict | 7.37 | |
| Minneapolis, St. Paul & Sault Ste. Marie | | |
| West of Antioch, Ill., to end of Wilmot spur | 3.37 | |
| Missouri Pacific | | |
| At Granite Bend, Mo. | 3.96 | |
| Benton, Ark., to end of new construction near QQ Junction | | 4.16 |
| Mobile & Gulf | | |
| Fayette, Ala., to Brownville | 23.00 | |
| New York Central | | |
| Wellsboro, Pa., to Antrim | 11.87 | |
| Manlius, N. Y., to Oran | 2.30 | |
| (Pittsburgh & Lake Erie) | | |
| Dickerson Run branch (portion) | 0.11 | |
| Elwell branch (portion) | 0.80 | |
| Little Redstone Branch Junction, to Landon | 1.43 | |
| New York, New Haven & Hartford | | |
| Tremont, Mass., to Fairhaven | 0.10 | |
| Hawleyville, Conn., to Litchfield | | 32.44 |
| Hawleyville, Conn., to Southbury | | 9.10 |
| Northern Pacific | | |
| Wyoming, Minn., to Taylors Falls | 20.58 | |
| Pennsylvania-Reading Seashore Lines | | |
| Newfield Branch, Pleasantville, N. J., to Atlantic City (1st track) | 1.42 | |
| Somers Point Branch, Pleasantville, N. J., to Somers Point (1st track) | 0.27 | |
| Rapid City, Black Hills & Western | | |
| Entire line, Rapid City, S. D., to Mystic | | 32.20 |
| Reading | | |
| Kimberton, Pa., to Byers | 6.67 | |
| Lockridge, Pa., to Rittenhouse Gap | 4.34 | |
| Trexlertown, Pa., to Breingsville | 1.76 | |
| St. Louis-San Francisco | | |
| Helm, Mo., to Hancock | 3.26 | |
| Swedeborg, Mo., to St. John | 3.81 | |
| St. Louis Southwestern | | |
| Caraway, Ark., to Rivervale | | 6.00 |
| Southern | | |
| Near Rome, Ga., to Gadsden, Ala. | 24.00 | 24.00 |
| Southern Pacific | | |
| Alpine branch, Ore. (end portion) | 0.05 | |
| Wendling branch, Ore. (end portion) | 2.56 | |
| Coalca, Ore., to Pulp | 0.28 | |
| Coos Bay branch, Cordes, Ore., to North Bend | 0.62 | |
| Karnak branch, Cal. (end portion) | 1.63 | |
| Union branch, Cal. (end portion) | 0.14 | |
| Madera branch, Madera, Cal., end of branch | 0.41 | |
| Near Andover, Cal. | 0.01 | |
| Tonopah & Goldfield | | |
| Entire line, Mina, Nev., to Goldfield | 97.28 | |
| Tonopah & Tidewater | | |
| Entire remaining line, Ludlow, Cal., to Crucero | 25.70 | |
| Union Pacific | | |
| Riverside Junction, Cal., to Crestmore | 2.00 | |
| Youngstown & Southern | | |
| New Galilee, Pa., to Darlington | | 2.00 |
| Columbiana, Ohio, to Leetonia | | 2.82 |
| Total (United States) | 462.70 | 154.14 |
| CANADA | | |
| Canadian National | | |
| Nevis, Alta., to Alix | | 9.21 |
| (Niagara, St. Catharines & Toronto) | | |
| Shriners, Ont., to Stamford | 4.86 | |
| Bridge street, Niagara Falls, Ont. | 0.26 | |
| Queen street, Niagara Falls, Ont. | 0.82 | |
| Victoria and Ferry sts., Niagara Falls, Ont. | 4.65 | |
| Lundys Lane, Ont. | 0.27 | |
| Queenston and St. Paul streets, St. Catharines, Ont. | 1.35 | |
| King street, St. Catharines, Ont. | 0.29 | |
| Ontario street, St. Catharines, Ont. | 0.97 | |
| Total (Canada) | 13.47 | 9.21 |
| MEXICO | | |
| Mexican Pacific | | |
| Kilometer 6.46 to kilometer G-9.79 | 6.21 | |
| Total (Mexico) | 6.21 | |

# COMMUNICATIONS CONSTRUCTION STEPPED UP

***New installations of road train communications, yard loud-speakers, long distance telephone circuits and pole lines increased substantially during 1948***

By MAURICE PEACOCK
Associate Editor—Signaling and Communications

During 1948 the railroads in the United States and Canada made big gains over 1947 in the installation of new, modern communications facilities as a whole. The results, as applying to pole lines, copper wire, circuits, and yard and road communication systems are shown individually by the statistics in the accompanying tables.

The total mileage of all new and rebuilt pole lines for 1948 was 7,908 mi., compared with 5,481 mi. in 1947, an increase of 2,427 mi. Installations of new copper line wire jumped from 5,720 mi. in 1947 to 19,833 mi. in 1948, an increase of 14,113 mi. The increase in miles of road dispatched by telephone was 1,445 mi., compared with 2,192 mi. in 1947, or 747 mi. less of added facilities. New mileage of long-distance telephone circuits installed increased 5,870 mi., from 18,299 mi. in 1947 to 24,169 mi. in 1948.

The mileage of new telegraph circuits jumped from 13,511 mi. in 1947 to 22,412 mi. in 1948, an increase of 8,901 mi. New printing telegraph circuit mileage added dropped 8,027 mi., from 31,279 mi. in 1947 to 23,252 mi. in 1948. The additional mileage of all new communications circuits derived by the use of carrier equipment was 44,456 mi. in 1948, compared with 52,720 mi. in 1947, a decrease of 8,264 mi.

The number of control points in new yard loudspeaker installations jumped from 34 to 161, an increase of 127, and the total number of two-way and paging speakers increased from 436 in 1947 to 1,791 in 1948, a difference of 1,355 units. New yard radio and inductive communications installations were down slightly in 1948, insofar as the number of locomotives and fixed stations equipped are concerned. The number of locomotives equipped totaled 240, compared with 247 in 1947, a decrease of 7, and the number of fixed stations was decreased by 8, from 51 in 1947 to 43 in 1948.

New mileage of road over which train communication is in service went up 2,110 mi., from 2,658 mi. in 1947 to 4,768 mi. in 1948. The number of locomotives equipped was 168, compared with 36 in 1947, an increase of 132. Cabooses and other cars equipped in 1948 totaled 129, compared with 33 in 1947, representing an increase of 96. The number of fixed wayside stations equipped was increased by 57, from 14 in 1947 to 71 in 1948.

Several roads installed telephones, public address and musical entertainment equipment on their passenger trains during 1948.

Among the trains so equipped were the "Super Chief," "Texas Chiefs" and "El Capitan" on the Atchison, Topeka & Santa Fe; some of the Chicago, Burling-

**New Circuit Miles Derived in 1948 by Superimposing Carrier on Existing Line Wires**

| Railroad | New Mileage of Long Distance Telephone Circuits | New Mileage of Telegraph Circuits | New Mileage of Printing Telegraph Circuits |
|---|---|---|---|
| A. T. & S. F. | 284.0 | ..... | 852.0 |
| A. C. L. | 980.4 | ..... | ..... |
| C. N. | 1,822.0 | 9,382.0 | 1,779.0 |
| C. P. | 8,900.0 | ..... | ..... |
| C. of Ga. | 180.0 | ..... | ..... |
| C. & O. (Ches. Dist.) | 904.0 | ..... | ..... |
| C. & I. M. | 112.0 | ..... | ..... |
| C. & N. W. | 1,200.0 | 980.0 | 2,450.0 |
| C. B. & Q. | 166.0 | ..... | ..... |
| C. I. & L. | 100.0 | ..... | ..... |
| C. M. St. P. & P. | 931.0 | ..... | ..... |
| C. & S. | 348.0 | ..... | ..... |
| D. & R. G. W. | 132.0 | ..... | ..... |
| D. M. & I. R. | 73.0 | ..... | ..... |
| G. N. | 78.0 | ..... | ..... |
| G. M. & O. | 367.0 | ..... | 139.0 |
| I. C. | 280.0 | ..... | ..... |
| L. & N. | 1,463.0 | ..... | ..... |
| M. P. | 515.0 | ..... | 628.0 |
| (Tex. Lines) | 359.0 | ..... | ..... |
| N. Y. C. | | | |
| (East) | 168.0 | ..... | ..... |
| (West) | 340.0 | ..... | 434.6 |
| (C. C. C. & St. L.) | 337.0 | ..... | ..... |
| (M. C.) | 190.0 | ..... | ..... |
| N. Y. N. H. & H. | ..... | ..... | 1,310.0 |
| N. & W. | 756.0 | ..... | 313.0 |
| Penna. | 292.4 | ..... | ..... |
| S. A. L. | 408.0 | 42.0 | ..... |
| Southern | 402.0 | 612.0 | 1,275.0 |
| (A. G. S.) | 143.0 | ..... | ..... |
| (C. N. O. & T. P.) | ..... | 1,352.0 | ..... |
| T. & P. | 299.0 | ..... | ..... |
| U. P. | 284.1 | ..... | ..... |
| W. P. | 194.0 | ..... | ..... |
| TOTALS | 22,907.9 | 12,368.0 | 9,180.6 |

**Comparison of Communications Facilities Installed on the Railroads in the United States and Canada During 1948 and 1947**

| | 1948 | 1947 |
|---|---|---|
| Miles of new or rebuilt pole line: | | |
| Railroad owned | 5,103.7 | 3,890.6 |
| Commercially owned | 1,476.0 | 1,115.2 |
| Jointly owned | 1,328.6 | 475.3 |
| TOTALS | 7,809.3 | 5,481.1 |
| Mileage of new copper line wire: | | |
| Railroad owned | 18,322.3 | 4,687.1 |
| Commercially owned | 1,510.7 | 1,033.6 |
| TOTALS | 19,833.0 | 5,720.7 |
| Increase in miles or road dispatched by telephone | 1,455.6 | 2,192.4 |
| New mileage of long-distance telephone circuits | 24,169.7 | 18,299.6 |
| New mileage of telegraph circuits | 22,412.3 | 13,511.4 |
| New mileage of printing telegraph circuits | 23,252.9 | 31,279.5 |
| New mileage of communications circuits derived by use of carrier | 44,456.5 | 52,720.9 |
| Yard loudspeakers: | | |
| Number of control points | 161 | 34 |
| Number of two-way speakers | 1,016 | ... |
| Number of paging speakers | 775 | ... |
| Total number of speakers | 1,791 | 436 |
| Yard radio and inductive communications: | | |
| Number of locomotives equipped | 240 | 247 |
| Number of fixed stations | 43 | 51 |
| Road train communication: | | |
| Miles of road | 4,768.8 | 2,658.7 |
| Number of locomotives equipped | 168 | 36 |
| Number of cabooses or other cars | 129 | 33 |
| Number of fixed wayside stations | 71 | 14 |

## Permanent Installations of Yard Radio and Inductive Communications Systems Placed in Service in 1948

| Railroad | Commun. Location | No. of Locomotives Equipped | No. of Fixed Stations | Space or Inductive Equipment | Equipment Manufacturer | Frequency Allocated by F. C. C. |
|---|---|---|---|---|---|---|
| A. T. & S. F. | Los Angeles, Cal. | 22 | 1 | Space | Bendix | 161.37 mc. |
| | Belen, N. M. | 4<br>6*** | 3 | Space | Ry. Radiotelo. & Farnsworth | 161.37 mc.,<br>161.73 mc. & |
| | Argentine, Kan. | 4<br>6*** | 3 | Space | Bendix, Ry. Radiotelo. & Farnsworth | 161.07 mc.<br>159.45 mc.,<br>158.85 mc. &<br>160.95 mc. |
| | Chicago | 9 | 2 | Space | Bendix | 160.65 mc. |
| B. & O. | Willard, Ohio | 8 | 2 | Space | G. R. S. | 159.93 mc. &<br>160.89 mc. |
| | East St. Louis, Ill. | 1 | 1 | Space | Bendix | 158.97 mc. |
| | New York | 8* | . | Space | G. R. S. | 160.89 mc. |
| C. of N. J. | | 7* | 1 | Space | G. R. S. | 160.89 mc., |
| C. of Penna. | | 2 | 1 | Space | G. R. S. | 160.89 mc. |
| C. & O. (Ches. Dist.) | Walbridge, Ohio | 2 | 1 | Space | Westinghouse | 161.37 mc. |
| | Newport News, Va. | 2* | .. | Space | Bendix | 158.55 mc. |
| (P. M. Dist.) | Detroit, Mich. | 3 | 1 | Space | Farnsworth | 159.09 mc. &<br>159.33 mc. |
| | Detroit, Mich. | 2** | .. | Space | Farnsworth | 159.09 mc. &<br>159.33 mc. |
| | Chicago | 4 | 1 | Space | Bendix | 159.09 mc. &<br>159.33 mc. |
| C. & N. W. | Proviso, Ill. | 3 | 1 | Space | Farnsworth. | 160.89 mc. |
| C. B. & Q. | Galesburg, Ill. | 10<br>2*** | 3 | Space | Bendix | 160.23 mc.<br>161.43 mc. &<br>161.85 mc. |
| | Kansas City, Mo. | 10<br>5*** | 1 | Space | Bendix | 159.69 mc. &<br>160.89 mc. |
| D. L. & W. | Hoboken, N. J. | 2* | . | Space | Bendix | 160.29 mc. |
| D. & R. G. W. | Denver, Colo. | 7 | 1 | Space | Bendix | 160.83 mc. |
| | Alamosa, Colo. | 1 | 1 | Space | Bendix | 160.83 mc. |
| | Salida, Colo. | 1 | 1 | Space | Bendix & Motorola | 160.83 mc. |
| D. T. & I. | Flat Rock, Mich. | 13 | 1 | Space | Farnsworth | 161.85 mc. |
| D. M. & I. R. | Proctor, Minn. | 10 | 1 | Space | Ry. Radiotelo. | 158.61 mc. |
| Erie | New York | 1* | .. | Space | Westinghouse | 158.85 mc. |
| | Jamestown, N. Y. | 2 | 1 | Space | Farnsworth | 159.33 mc. |
| I. C. | Chicago | 2 | 1 | Space | Farnsworth | 161.85 mc. |
| N. Y. C. & St. L. | Cleveland, Ohio | 7 | 1 | Space | Farnsworth | 161.25 mc. |
| | Buffalo, N. Y. | 6 | 1 | Space | Bendix | 161.25 mc. |
| N. Y., N. H. & H. | Hartford, Conn. | 3 | 1 | Space | G. R. S. | 161.55 mc. |
| | New York | 13**** | 1 | Space | B. R. S. | 161.49 mc. |
| N. & W. | Williamson, W. Va. | 3 | 1 | Inductive | Union | ..... |
| Penna. | Elrama, Pa. | 2 | .. | Space | Western Electric+ | 157.89 mc. &<br>152.63 mc. |
| R. F. & P. | Alexandria, Va. | 16 | 2 | Space | Farnsworth | 161.13 mc. &<br>161.49 mc. |
| Southern | Atlanta, Ga. | 5 | 1 | Space | G. R. S. | 158.97 mc. |
| | Knoxville, Tenn. | 3 | 2 | Space | G. R. S. | 160.29 mc. &<br>160.65 mc. |
| S. A. L. | Jacksonville, Fla. | 10<br>1†† | 1 | Space | Bendix | 160.65 mc.<br>160.89 mc. |
| Union | North Braddock, Pa. | 4 | 1 | Space | Westinghouse | 158.43 mc.,<br>161.97 mc. &<br>159.87 mc. |
| U. P. | North Platte, Neb. | 8 | 2 | Space | Motorola | 160.29 mc. &<br>160.41 mc. |
| TOTALS | | 240 | 43 | | | |

Legend: *Tug Boats. **Ferry Boats. ***Walkie-Talkie Units. +Leased from Bell System. ****Radar. ††Automobiles.

## Permanent Installations of Road Train Communication Placed in Service in 1948

| Railroad | Commun. From | To | Miles of Road | No. of Loco-Motives | No. of Cabooses or other Cars | No. of Fixed Wayside Stations | Space or Inductive Equipment | Manufacturer | Power Supply on Cabooses | Frequency allocated by F.C.C. |
|---|---|---|---|---|---|---|---|---|---|---|
| A. & S. | East St. Louis, Ill. | ..... | 21.0 | 14 | .. | 2 | Space | Farnsworth | ... | 158.79 mc. |
| A. T. & S. F. | Chicago | Argentine, Kan. | 455.0 | 2 | 2 | 1 | Space | Bendix | Axle Gen. & Diesel Eng. Gen. | 160.65 mc. |
| | Bakersfield, Cal. | Barstow, Cal. | 141.0 | 25 | 11 | .. | Space | Bendix | Diesel Eng. Gen. | 160.65 mc. |
| B. & M. | Boston, Mass. | Mechanicsville, N.Y. | 186.0 | 2 | 2 | 3 | Space | G. R. S. | Axle Gen. | 159.63 mc. &<br>159.69 mc, |
| C. B. & Q. | Chicago | Denver, Colo. | 1,017.0 | 20* | .. | .. | Space | Bendix | Axle Gen. | 159.69 mc. |
| D. & R. G. W. | System | ..... | 790.0 | 15 | 15 | 21 | Both | Ry. Radio-telo | Diesel Eng. Gen. & Axle Gen. | 159.81 mc. |
| D. M. & I. R. | Duluth, Minn. | Ely and Virginia, Minn. | 202.0 | 14 | 19 | 7 | Inductive | Ry. Radiotelo. | Diesel Eng. Gen. | ..... |
| Erie | Marion, Ohio | Salamanca, N. Y. | 360.3 | 16* | 15 | 14 | Space | Farnsworth | Stor. Bat. & Axle Gen. | 159.09 mc. &<br>160.05 mc. |
| G. M. & O. | ..... | ..... | .... | 6 | 6<br>5** | .. | Space | Bendix | Preco Dr. Altern. | 161.73 mc. |
| K. C. S. | Shreveport, La. | Port Arthur, Tex. | 227.0 | 6 | 7 | 5 | Inductive | Harmon | Axle Gen. Stor. Bat. Rotary Con. | ..... |
| M.-K.-T. | St. Louis, Mo. | Waco, Tex. | 834.0 | 2 | 2 | .. | Space | Bendix | Generator | 159.21 mc. |
| N.Y.N.H.& H. | New Haven, Conn. | New York | 115.0 | .. | 2 | 1 | Inductive | G. R. S. | Diesel Eng. Gen. | ..... |
| N. P. | Yakima, Wash. | Auburn, Wash. | 139.0 | 11 | 11 | 2 | Space | Bendix | Axle Gen. Stor. Bat. | 161.25 mc. &<br>161.01 mc. |
| Penna. | Columbus, Ohio | Sandusky, Ohio | 107.0 | 31 | 28 | 10 | Inductive | Union | Axle Gen.-Stor. Bat. | |
| U. P. | Kansas City, Kan. | Marysville, Kan. | 174.5 | 4 | 4 | 5 | Space | Motorola & Farnsworth | Diesel Eng. Gen.&Axle Gen.-Stor. Bat. | 159.93 mc.,<br>160.05 mc.,<br>160.17 mc. &<br>160.29 mc. |

Legend: *Double-end locomotives—Both cabs equipped.
**Automobiles

### Yard Loud-speaker Installations During 1948

| Railroad and Commun. | No. of Control Points | No. of Two-Way Speakers | No. of Paging Speakers |
|---|---|---|---|
| A. & S. | | | |
| East St. Louis, Ill. | 1 | 24 | 9 |
| B. & O. | | | |
| Chicago (Barr Yd.) | 2 | 185 | 30 |
| East St. Louis, Ill. (Cone Yd.) | 1 | 40 | 18 |
| B. & M. | | | |
| Boston, Mass. | 1 | .. | 63 |
| C. & O. (Ches. Dist.) | | | |
| Walbridge, Ohio | 8 | .. | 31 |
| Presque Isle, Ohio | 1 | .. | 38 |
| C. & O. (P. M. Dist.) | | | |
| Grand Rapids, Mich. | 3 | 6 | 4 |
| C. & N. W. | | | |
| Chicago (Proviso Yd.) | .. | 19 | 32 |
| C., M. St. P. & P. | | | |
| Chicago | 9 | .. | 48 |
| D. & R. G. W. | | | |
| Salt Lake City, Utah (Roper Yd.) | 2 | 74 | 24 |
| Grand Jct., Colo. | 1 | 12 | 7 |
| Pueblo, Colo. | 1 | 62 | 20 |
| E. J. & E. | | | |
| Joliet, Ill. | 2 | 96 | 30 |
| Erie | | | |
| Croxton, N. J. | 1 | .. | 2 |
| G. N. | | | |
| St. Cloud, Minn. | 1 | 3 | .. |
| Allouez, Wis. | 2 | 4 | .. |
| Glacier Park, Mont. | 1 | .. | 9 |
| G. M. & O. | | | |
| Chicago (Glenn Yd.) | 1 | 26 | .. |
| I. C. | | | |
| Jackson, Miss. | 13 | .. | 14 |
| Fulton, Ky. | 9 | .. | 6 |
| L. & N. | | | |
| Hazard, Ky. | 1 | .. | 9 |
| Nashville, Tenn. | 2 | .. | 14 |
| M. St. P. & S. S. M. | | | |
| Schiller Park, Ill. | 1 | 10 | .. |
| M.-K.-T. | | | |
| Glen Park, Kan. | 1 | .. | 5 |
| M. P. | | | |
| Osawatomie, Kan. | 1 | 10 | 2 |
| Kansas City, Mo. | 1 | 7 | 7 |
| N. Y. Bd. of Transp. | | | |
| Brooklyn, N. Y. (Tr. Coach Dept.) | 4 | 4 | 5 |
| N. Y. C. (East) | | | |
| Buffalo, N. Y. | .. | 8 | .. |
| White Plains, N. Y. | 2 | .. | 2 |
| Rochester, N. Y. | .. | 6 | .. |
| N. Y. C. (West) | | | |
| Chicago (Eng. Term.) | 1 | .. | 18 |
| Chicago (Root St.) | .. | .. | 3 |
| Toledo, Ohio (Pass. Sta.) | 5 | .. | 14 |
| Toledo, Ohio (Mail Hall) | .. | .. | 2 |
| Cleveland, Ohio (Orange St.) | 15 | .. | 23 |
| N. Y. C. (B. & A.) | | | |
| Springfield, Mass. (Freighthouse) | 1 | 15 | .. |
| N. Y. C. (C. C. C. & St. L.) | | | |
| Cincinnati, Ohio (Central Ave.) | 1 | .. | 8 |
| N. Y. C. (I. H. B.) | | | |
| Blue Island, Ill. | 5 | .. | 5 |
| N. Y. C. (M. C.) | | | |
| Detroit, Mich. (North Yd.) | 2 | .. | 8 |
| Detroit, Mich. (Third St.) | 4 | .. | 47 |
| West Detroit, Mich. | 2 | .. | 7 |
| Windsor, Ont. (Enginehouse) | 1 | .. | 3 |
| N. Y. N. H. & H. | | | |
| Maybrook, N. Y. | 8 | .. | 21 |
| Harlem River, N. Y. | 3 | .. | 11 |
| N. & W. | | | |
| Columbus, Ohio | 2 | 16 | .. |
| Williamson, W. Va. | 3 | 30 | 3 |
| Norfolk, Va. (Lambert Pt.) | 3 | 30 | 8 |
| Penna. | | | |
| Elrama, Pa. | 4 | 4 | 15 |
| Cleveland, Ohio | 2 | 5 | 6 |
| Sandusky, Ohio | 1 | .. | 5 |
| Indianapolis, Ind. | 1 | .. | .. |
| Enola, Pa. | 1 | .. | 1 |
| Altoona, Pa. | 1 | .. | 3 |
| Elmira, N. Y. | 1 | .. | 3 |
| R. F. & P. | | | |
| Richmond, Va. | 1 | 25 | 50 |
| St. L.-S. F. | | | |
| Kansas City, Mo. | 1 | .. | 1 |
| Rosedale, Kan. | 1 | .. | 1 |
| St. L. S. W. | | | |
| Texarkana, Tex.-Ark. | 1 | 18 | 4 |
| Pine Bluff, Ark. | 1 | 21 | 6 |
| East St. Louis, Ill. | 1 | 19 | 1 |
| S. A. L. | 3 | 3 | 7 |
| Southern | | | |
| Alexandria, Va. | 2 | .. | 11 |
| Asheville, N. C. | 3 | 56 | .. |
| Charlotte, N. C. ("CD" Yd.) | 1 | 10 | 4 |
| Charleston, S. C. (Coal Pier) | 1 | 3 | 2 |
| Charleston, S. C. (Line St.) | 1 | 5 | 3 |
| Union | | | |
| Nortn Braddock, Pa. | 1 | 30 | 6 |
| U. P. | | | |
| North Platte, Neb. | 2 | 110 | 27 |
| W. & L. E. | | | |
| Brewster, Ohio | 1 | 11 | 9 |
| TOTALS | 161 | 1,016 | 775 |

### New Mileage of Telephone Train Dispatching and Long-Distance Telephone Service—1948

| Railroad | Increase in Miles of Road Dispatched by Telephone | New Mileage of Long-Distance Telephone Circuits |
|---|---|---|
| A. T. & S. F. | ..... | 836.1 |
| A. C. L. | ..... | 980.4 |
| B. & O. | 391.0 | 5,261.0 |
| B. & L. E. | ..... | 12.9 |
| C. N. | 35.0 | 2,331.0 |
| C. of Ga. | ..... | 180.0 |
| C. & O. (Ches. District.) | 70.7 | 904.0 |
| C. & I. M. | ..... | 112.0 |
| C. & N. W. | ..... | 1,200.0 |
| C. B. & Q. | ..... | 294.0 |
| C. I. & L. | ..... | 100.0 |
| C. M. St. P. & P. | ..... | 931.0 |
| C. & S. | ..... | 484.0 |
| D. & H. | 57.1 | ..... |
| D. L. & W. | ..... | 95.1 |
| D. & R. G. W. | ..... | 428.0 |
| D. M. & I. R. | ..... | 73.0 |
| E. J. & E. | 73.0 | 146.0 |
| F. E. C. | 71.0 | ..... |
| G. N. | ..... | 78.0 |
| G. M. & O. | 55.7 | 367.0 |
| I. C. | 308.0 | 2,293.0 |
| L. & N. | 17.0 | 1,660.0 |
| M. St. P. & S. S. M. | ..... | 161.0 |
| M. P. | 205.1 | 515.0 |
| (Tex. Lines) | ..... | 369.0 |
| N. C. & St. L. | ..... | 151.0 |
| N. Y. C. | | |
| (East) | ..... | 168.0 |
| (West) | ..... | 340.0 |
| (C. C. C. & St. L.) | ..... | 337.0 |
| (M. C.) | ..... | 190.0 |
| N. & W. | ..... | 756.0 |
| N. P. | ..... | 240.0 |
| Penna. | ..... | 292.4 |
| S. A. L. | ..... | 408.0 |
| Southern | 162.0 | 402.0 |
| (A. G. S.) | ..... | 143.0 |
| S. P. (T. & N. O.) | ..... | 94.5 |
| S. P. & S. | ..... | 6.2 |
| T. & P. | ..... | 299.0 |
| U. P. | ..... | 284.1 |
| W. P. | ..... | 247.0 |
| TOTALS | 1,445.6 | 24,169.7 |

ton & Quincy's "Zephyrs" and some of the Chicago, Milwaukee, St. Paul & Pacific's "Hiawathas"; the "Texas Special" on the Missouri-Kansas-Texas; some of the Texas & Pacific's "Eagles," and the New York, New Haven & Hartford's "Merchants Limited" and "Yankee Clipper." Some of these roads also equipped individual cars operating in other trains.

### Telegraph and Printing Telegraph Placed in Service in 1948

| Railroad | New Mileage of Telegraph Circuits | New Mileage of Printing Telegraph Circuits |
|---|---|---|
| A. T. & S. F. | 2,510.3 | 1,789.2 |
| B. & O. | 432.0 | 432.0 |
| C. N. | 9,455.0 | 4,837.0 |
| C. P. | 6,830.0 | 4,921.0 |
| C. & N. W. | 980.0 | 2,450.0 |
| C. B. & Q. | ..... | 357.0 |
| C. & S. | 136.0 | 136.0 |
| D. M. & I. R. | ..... | 109.5 |
| G. N. | 63.0 | ..... |
| G. M. & O. | ..... | 320.7 |
| I. C. | ..... | 417.0 |
| L. & N. | ..... | 172.0 |
| M. P. | ..... | 628.0 |
| N. Y. C. | | |
| (East) | ..... | 171.0 |
| (West) | ..... | 1,057.0 |
| (C. C. C. & St. L.) | ..... | 199.0 |
| (M. C.) | ..... | 515.6 |
| N. Y., N. H. & H. | ..... | 1,485.0 |
| N. & W. | ..... | 352.0 |
| Penna. | ..... | 264.5 |
| R. F. & P. | ..... | 108.0 |
| S. A. L. | 42.0 | 136.0 |
| Southern | 612.0 | 1,275.0 |
| (C. N. O. & T. P.) | 1,352.0 | ..... |
| T. & P. | ..... | 215.0 |
| U. P. | ..... | 739.4 |
| W. M. | ..... | 166.0 |
| TOTALS | 22,412.3 | 23,252.9 |

# AUTHORIZES 5.2 PER CENT FREIGHT-RATE INCREASE

***$425 million a year expected to be realized from interim advance approved by I.C.C. in Ex Parte 168 case; territorial percentages range from 4 to 6 per cent, the latter going to eastern and southern roads***

By WALTER J. TAFT
Washington Editor

Increases in freight rates and charges, which are expected to yield approximately $425 million a year, were authorized by the Interstate Commerce Commission in a December 29, 1948, report on the interim-relief phase of the Ex Parte 168 proceeding. Averaging about 5.2 per cent overall, as compared with the 8 per cent sought by the railroads in their motion for interim relief, the increases will be 6 per cent within Eastern and Southern territories and between those territories, 5 per cent within zone 1 of Western Trunk Line territory, 4 per cent within Western territory other than zone 1, and 5 per cent on interterritorial movements except those between Eastern and Southern territories.

The commission's report authorized publication of the increases on 5-days' notice, and the railroads planned to file the necessary tariffs in time to make January 11 the effective date. The report also authorized intervening water carriers and freight forwarders to publish similar increases. The new rates will remain in effect until the commission passes upon the carriers' basic petition in the proceeding for authority to make a permanent advance of 13 per cent.

The 20-page decision, dated December 29, 1948, as noted above, was made public the following day. That was 20 days after submission of the case with the close of oral argument on December 10, 1948 (see *Railway Age* of December 18, 1948, page 49). It was an unanimous decision in which all members of the commission participated; and there were no separate expressions.

## Territorial Distribution of Revenue

The estimate that the annual yield will be approximately $425 million was set out in the notice which I.C.C. Secretary W. P. Bartel issued to summarize the decision. The figure was based upon "estimates in the record," and upon "the assumption that corresponding increases will be made effective on intrastate traffic." The notice also pointed out that "necessarily, the results of this increase will depend upon the course of future traffic." The territorial distribution of the additional revenue was given as follows: Eastern district, $180 million; Pocahontas region, $30 million; Southern region, $65 million; Western district, $140 million; and United States, $415 million. "To this total," the notice continued, "should be added approximately $10 million for increases allowed on other charges made by the rail lines . . . which makes a total of approximately $425 million per annum." The railroads had estimated that their 8 per cent proposal would have yielded approximately $672.5 million on the basis of anticipated 1949 traffic volume.

Secretary Bartel's notice also said that "the total cumulated increases in freight revenue since June 30, 1946, including the present authorization, will be at the rate of approximately $2,900,000,000 per annum, or approximately an overall increase of 52 per cent of the rates effective at that date." It added that the eastern railroads "have been relatively the greatest beneficiaries in this increase, as they are in the authorizations now made." Finally, the notice announced that hearings on the proposed permanent increase of 13 per cent will be held "as speedily as possible . . . at a convenient place in each of the four rate territories," and thus "a more full opportunity will be given protestants to make their showing than could be given upon the recent hearing" of the interim-relief motion.

## Coal and Iron Ore Take Percentage Raises

The authorized percentage increases may be applied to all freight rates, except those on fresh fruits and vegetables, sugar, lumber, and articles taking lumber rates, where they will be limited by cents-per-100-lb. maxima. This exceptional treatment had been proposed by the railroads; and they also suggested specific cents-per-ton increases on coal, coke, and iron ore, to which the commission's decision authorizes only application of the general percentage increases.

The latter will amount to somewhat less than the specific advances proposed by the railroads, which were 30 cents per net ton or 34 cents per gross ton on coal and coke and 25 cents per ton, net or gross as rated, on iron ore. An estimate made after the decision was announced indicated that, in the case of coal, the percentage increases would raise the rates by about 15 to 20 cents per ton. The railroads' proposal as to iron ore exempted the line-haul rates on that moving from the Missabe range to upper Great Lakes ports, and the commission also exempted those movements from the authority it granted for application of the general percentage increases to iron-ore rates.

The maximum increase authorized on fresh fruits and vegetables is 6 cents per 100 lb., as compared with 8 cents proposed by the railroads; on sugar, lumber, and articles taking lumber rates, it is 4 cents per 100 lb., as compared with the 5 cents proposed. The proposed increase in charges for protective service to perishable freight was denied, the commission having found that this phase of the carriers' petition was not shown on the record to be "just and reasonable." The commission also found that there should be no increase in the charges for unloading fresh fruits and vegetables at New York and Philadelphia, Pa., which were estab-

lished recently pursuant to the commission's decision in I. & S. Docket No. 5500.

Charges exempted from the proposed increases by the carriers include those for loading and unloading livestock; handling and wharfage charges at South Atlantic and Gulf of Mexico ports; charges for handling iron ore at the upper Great Lakes ports, and for storing it at the lower lake ports (where handling charges will go up 6 per cent). Also, there will be no increases in demurrage charges, or in allowances paid by railroads for drayage or other services performed by shippers or receivers of freight.

Generally, the report indicated that the commission undertook to authorize rate increases which would offset the 10-cent-per-hour wage increase granted recently to operating employees and prospective increases to non-operating employees as a result of the emergency board report issued on December 17, 1948, with recommendations calling for a 7 cents per hour wage increase, retroactive to October 1, 1948, and a 40-hour week, effective September 1, 1949. This emergency board report was part of the record in the rate case by stipulation of all parties.

Meanwhile, the commission rejected railroad contentions that some rate increase was required to offset increases in costs of materials and supplies which occurred after those considered in the commission's July 27, 1948, report in the previous general rate case—Ex Parte 166. In that report the commission set up figures for a "constructive normal year," the supply prices in such figures being those of November 1, 1947; and the railroads suggested that price increases since that date should be offset by rate increases authorized in the present case.

### No Allowance for Price Increases

Of that contention, the commission had this to say: "While as stated in that [Ex Parte 166] report, our computations of the rate of return to be expected in a constructive normal year were based upon continuance of the general level of fuel, material, and supply prices as of November 1, 1947, we had before us the current reports of the carriers to later dates . . . and we anticipated that there might be deviations from the general level, both upward and downward, in the prices of various commodities. The present record presents a relatively short run since our former decision, and we do not feel warranted on such a short run in concluding that there is in prospect a continued general increase in material costs, particularly as the latest figures shown indicate somewhat of a downward tendency."

The commission also considered the railroad traffic estimates as too pessimistic. Those estimates had put the 1948 business at 637 billion ton-miles, and the 1949 traffic at 621 billion ton-miles if no rate increase were granted, and at 619.4 billion ton-miles if the full 13 per cent increase proposed in the basic petition were approved. The commission thought the 1948 total might well reach 640 billion ton-miles, and it found insufficient evidence "to warrant the conclusion now that the ton-miles in 1949 will be appreciably below those of the full year 1948." Thus, as the report put it, "we have taken into consideration the effect of increased rates on the basis of 640 billion ton-miles for the year 1949."

After sketching the background in some detail and tracing the development of the present proceeding, the commission came to its disposition of several motions which had been filed by non-carrier parties. All such motions were overruled.

### On the Motions

In that connection, the commission dealt first with the Dairy Industry Committee's motion which called for a broadening of the proceeding to bring into issue the divisions of joint rates and the reasonableness of all increases in freight rates and charges that have been authorized or ordered during the post-war period. In denying that request, the commission said its action was "without prejudice to any conclusion that may be reached if, at a further hearing on the continuing phase of petitioners' proposals, there should be a proffer of evidence based upon the studies of the members of our staff." As to the divisions phase of this motion, the commission said that the investigation sought would "largely duplicate" pending divisions cases.

The other overruled motions were filed by the Department of Agriculture, the Southeastern Association of Railroad & Utilities Commissioners, and the Southern Pine Association. As the report summarized them, they resolved themselves into a request that, before granting any rate increases, the commission institute an investigation into the operations of the railroads for the purpose of determining whether or not they are being efficiently and economically operated.

The commission concluded that "the subject, on the scale sought by the motions, is too intricate and extensive to permit its inclusion in an investigation such as this, to which, since it involves 'a change in a rate, fare, charge or classification,' we are required under section 15(7) of the act to give 'preference over all other questions' pending before us and to 'decide the same as speedily as possible." The commission had led up to this conclusion by pointing out that its Ex Parte 104 investigation of railroad practices affecting operating revenues and expenses, which was instituted in 1931, is a continuing proceeding.

"While progress has been made," the report continued, "much remains to be done, particularly in achieving the economies which require cooperation and coordination among the railroads, but we must recall that war disrupted all industries and its effects are still felt. The record and statistics available to us show many respects in which the service of the railroads has been bettered, at a lessened cost in man-hours and in capital outlays than before the late war, and indicate many improvements are in progress."

As to the request for an investigation by it of the labor operating rules, the commission said it was aware that the national transportation policy called for the encouragement of "fair and equitable working conditions"; and that the working rules "definitely have bearing upon the operating economy of the railroads." Then it added: "Congress has created agencies for the ascertainment of facts involved in disputes involving labor operating rules, and duplication of investigation by this commission of disputes or as to agreements concerning rules is both unnecessary and inappropriate."

# Construction Activity Increases

(*Continued from page 235*)

*Grade Crossing Eliminations*: Lincoln Highway, Union Grove, Ill., cost borne 90 per cent by the state and 10 per cent by the railway, $232,863 (65); Linn county cutoff, Cedar Rapids, Iowa, constructed by the state, $13,184 paid by the railway, $66,665 (100); east of Green Bay, Wis., U. S. 141, eliminating Town Line road crossing, $106,420 (100). Revision of Highway: Relocation of state highway 113, one mile west of Mendota, Ill. (100). Reconstruction of Existing Grade Crossing Structures: Construction of an extension to a bridge to include new highway route No. 4, constructed and paid for at the expense of the state, Girard, Ill., $64,040 (90).

*Important Work Undertaken*: Construction of a double track, continuous, I Beam bridge over Willow road, Techny, Ill., constructed by Cook County with the railway making necessary track and signal changes at the expense of the county, $152,000 (100); installation of C. T. C., including necessary track changes, West Chicago, Ill., to Nelson, $1,935,600 (55); construction of a Diesel locomotive servicing and repair shop, complete with all facilities, including necessary track changes, Chicago shops, Chicago, $1,767,570 (95); construction of three additional yard tracks in Proviso yard and the rearrangement of other tracks with an additional lead to facilitate the movement of freight, Proviso, Ill., $157,130 (60); construction of a servicing shop for freight Diesels at Proviso freight yard, Proviso, Ill., $641,760 (40); installation of a car unloader, Council Bluffs, Iowa, $245,000 (100); raise track grade 3 ft. over bridges, Belle Plaine, Iowa, $134,100 (100); construction of a 350-ton concrete coaling plant, including necessary track changes, Council Bluffs, Iowa, $131,045 (100); construction of additional yard tracks and yard office, Clinton, Iowa, $199,563 (100); raise grade of track and construct new bridge over Boyer river, Denison, Iowa, $288,530 (100); construction of a new steel bridge over Boyer river, Arion, Iowa, $238,790 (100); construction of a new steel bridge over Boyer river, Dunlap, Iowa, $248,950 (100); construction of concrete pile piers on which to install a 110-ft. steel span, Ames, Iowa, $139,000 (90); raise grade of track 3½ ft., Vail, Iowa, to Denison, $171,930 (started); construction of a concrete-pile steel bridge, Norway, Iowa, $112,000 (75); raise grade of track 4½ ft., Denison, Iowa, $103,500 (85); construction of 535 ft. of steel sheet-pile bulkhead, and 416 ft. of pile and timber fender, ferry slip No. 2, Manitowoc, Wis., $100,000 (100).

## Cincinnati Union Terminal

*Important Work Undertaken*: Rehabilitation of coach yard, including the construction of concrete service platforms, an inspection pit, and incidental steam and water facilities, $422,148 (100); revamping of electrical circuits used for air conditioning and battery charging on the station platform area, $375,000 (100).

## Clinchfield

*Important Work Undertaken*: Construction of an extension to four stalls of an enginehouse, including installation of a three track drop table, 18 ft. long, Erwin, Tenn., $100,000 (75); construction of a Diesel-locomotive repair and servicing shop, including installation of a two-track drop table, 18 ft. long, Erwin, Tenn., $148,400 (50).

## Delaware, Lackawanna & Western

*Grade Crossing Eliminations*: Subways: East Amherst street, Buffalo, N. Y., across rights-of-way of the Delaware, Lackawanna & Western and the Erie, cost distributed 50 per cent to the city and 25 per cent to each railroad, $321,000 (96).

## Denver & Rio Grande Western

*Important Work Undertaken*: Construction of new yard, including tracks and other facilities, North Denver, Colo., $1,999,815 (10); installation of 29.34 mi. of heavier rail, $754,385 (100); installation of heavier second-hand rail, including seven turnouts on Marysvale branch, $133,422 (100); installation of concrete lining and concrete portals, replacing timber lining in four tunnels, $100,000 (100).

## Detroit, Toledo & Ironton

*Important Work Undertaken*: Construction of facilities for the repair and servicing of Diesel locomotives, Flat Rock, Mich., $450,000 (100); construction of a transfer station and office building, Detroit, Mich., $170,000 (100).

## Elgin, Joliet & Eastern

*Important Work Undertaken*: Relocation of Standard Oil Company yard, Whiting, Ind., $118,000 (100).

## Erie

*Grade Crossing Eliminations*: Revision of Highway: Extension of East Amherst St., Buffalo, N. Y., work performed by Erie and D.L.&W. at the expense of the railroads and city (95). Reconstruction of Existing Grade Crossing Structures: Warren Point, N. J., state highway route No. 4, work done by state with federal aid (100); Narrowsburg, N. Y., work done by the railroad, with half of the cost being borne by the state and the county (99).

*Important Work Undertaken*: Construction of new passenger station, including rearrangement of tracks, Akron, Ohio (100); construction of a new passenger station, including waiting shed and parking ground at Lee Road Shaker Heights, Cleveland, Ohio (100), construction of approach for connection into Union Terminal, Cleveland, Ohio (70).

## Florida East Coast

*Important Work Undertaken*: Construction of enginehouse, storeroom and other incidental servicing facilities, including tracks, fuel stotage and water supply facilities, Fort Pierce, Fla., $103,000 (5); construction of additional freight warehouse facilities, including a concrete and steel warehouse and office building, tracks and access driveways, Miami Belt Line, Fla., $182,700 (40).

## Fort Street Union Depot

*Grade Crossing Eliminations*: Subways: Detroit, Mich., Fort Jefferson connection to the John C. Lodge Expressway, $600,000 (started), Detroit, Mich., expressway crossing, $850,000 (started).

*Important Work Undertaken*: Detroit, Mich., modernization and rehabilitation of passenger station, $1,000,000 (100).

## Georgia & Florida

*Grade Crossing Eliminations*: Overcrossings: West Green, Ga., constructed by state with federal funds, $75,000 (80). Subways: Vidalia, Ga., constructed by state with federal funds, $65,000 (30).

## Great Northern

*Grade Crossing Eliminations*: Overcrossings: Scenic, Wash., with railway and state funds, $23,985 (100); Northport, Wash., at state expense, $27,500 (100); Minot, N. D., at railroad expense, $15,000 (100); Coleraine, Minn., at railroad expense, $15,800 (100). Sixth avenue, Minneapolis, Minn., cost borne 90 per cent by the state and 10 per cent joint with the Minneapolis & St. Louis, $215,296 (100); Judith Gap, Mont., cost borne 90 per cent by the state, and 10 per cent by the railroad, $110,000 (100); Seventh street, Minneapolis, Minn., at railroad expense, $9,900 (started). Subways: Malta, Mont., at state expense, $87,090 (started); Brewster, Wash., state and railway funds, $5,940 (100); St. Cloud, Minn., at state expense, $164,300 (started); Towner, N. D., at railroad expense, $172,015 (45). Reconstruction of Existing Grade Crossing Structures: Overhead bridge, 7th street, Minneapolis, Minn., $37,500 (100); Lafayette avenue, St. Paul, Minn., $27,500 (100); Belknap street, Superior, Wis., $50,100 (started); 21st street, Superior, Wis., $24,300 (started); Washington avenue, Minneapolis, Minn., joint with the Minneapolis & St. Louis, $54,900 (85); Marion street, foot bridge, Seattle, Wash., $1,800 (100); St. Paul-Minneapolis, Minn., $17,175 (started); Maple Plain, Minn., $4,500 (100); 10th avenue, Duluth, Minn., $568 (100); 19th avenue, Minneapolis, Minn., $11,940 (started); Wall street, Sioux City, Iowa, $4,500 (started); Bridge 128.7, Alexandria, Minn., $825 (100); Wenatchee, Wash., at state expense, $3,446 (100); Central avenue, N. E. Minneapolis, Minn., $90,600 (started); 1st avenue, Minneapolis, Minn., joint with the Minneapolis & St. Louis, $26,850 (started); four bridges, St. Paul and Minneapolis, $21,800 (started); Pennsylvania avenue, Minneapolis, Minn., $12,500 (started); Irvine avenue, Bemidji, Minn., $5,500 (started); Belknap street, Superior, Wis., $30,200 (started); Wayzata boulevard, Minneapolis, Minn., $14,435 (100); replace overhead bridge, Osakis, Minn., $8,800 (started); renew overhead bridge, Minneapolis, Minn., $105,000 (started); Minneapolis, Hopkins and Wayzata, Minn., with railway and state funds, $26,300 (100).

*Important Work Undertaken*: Installation of new tie plates, Dakota division, $108,800 (45); construction of office building and passenger station, Willmar, Minn., $153,000 (100); installation of automatic block signals, including necessary track changes, Fargo, N. D. to Surrey, $790,245 (99); reconstruction of bridges and culverts, Cascade division, $111,845 (95); reconstruction of bridges and culverts, Butte division, $183,335 (100); construction of mine tracks, Hibbing, Minn., $154,000 (100); construction of car repair shed, Seattle, Wash., $243,000 (100); reinforcement of bridge, Sandstone, Minn., $117,900 (80); reconstruction of bridges and culverts, Butte division, $124,730 (90); revision of alinement of mine track, Buhl, Minn., $298,500 (100); construction of inspection pit for streamliner, Seattle, Wash., $142,000 (100); repairs to ore docks, Allouez, Wis., $250,000 (100); construction of storehouse at King Street coach yard, Seattle, Wash., $110,250 (100); remodeling enginehouse for Diesel shop, St. Paul Minn., $345,000 (50); reconstruction of bridges and culverts, Spokane division, $134,960 (10); alterations to mine tracks, Buhl, Minn., $101,175 (95); enlarging electric shop, St. Paul, Minn., $253,500 (100); remodeling enginehouse into Diesel shop, Interbay, Wash., $105,950 (100); remodeling power plant, Minneapolis Junction, Minn., $123,200 (15); remodeling power plant, St. Paul, Minn., $212,400 (100); reconstruction of ore docks, Allouez, Wis., $258,000 (1); revision of alinement, Penrith, Wash., $193,000 (95); revision of alinement, Merritt, Wash., $903,000 (50); renewal of No. 2 snowshed, Spotted Robe, Mont., $130,300 (70); construction of office building on pier 88, Seattle, Wash., $784,450 (98); enlargement of freighthouse, Minneapolis, Minn., $105,000 (75); construction of central heating plant, Seattle, Wash., $254,300 (10); installation of sprinkler system in building, Glacier Park, Mont., $120,100 (95); reconstruction of enginehouse stalls, Superior, Wis., $161,000 (97); construction of track for American Crystal Sugar Co., Moorhead, Minn., $180,000 (100); revision of alinement, Yakt, Mont., $102,550 (90); replacement of bridge, Silvana, Wash., $249,000 (75).

Widen embankment and install 8 mi. of 112-lb. rail, Elmira, Idaho, to Colburn, $116,400 (100); widen embankment and install 15 mi. of 112-lb. rail, Juanita, N. D., to Dundas, $257,800 (90); widen embankment and install 26 mi. of 112-lb. rail, Cut Bank, Mont., to Blackfoot, $590,000 (90); widen embankment and install 19 mi. of 112-lb. rail, Shelby, Mont., to Cut Bank, $438,305 (100); widen embankment and install 8 mi. of 131-lb. rail, Crossport, Idaho, to Bonners Ferry, $213,600 (80); widen embankment and install 13 mi. of 112-lb. rail, Lohmann, Mont., to Havre, $305,000 (100);

widen embankment and install 6 mi. of 112-lb. rail, Columbia Falls, Mont., to Whitefish, $156,600 (85); widen embankment and install 5 mi. of 131-lb. rail, Troy, Mont., to Yakt, $152,950 (95); widen embankment and install 7 mi. of 112-lb. rail, Dean, Wash., to Hillyard, $181,350 (100); widen embankment and install 17 mi. of 112-lb. rail, Wilson Creek, Wash., to Soap Lake, $555,500 (85); widen embankment and install 17 mi. of 112-lb. rail Silvana, Wash., to Mt. Vernon, $514,850 (90); widen embankment and install 4 mi. of 112-lb. rail, Appleyard, Wash., to Wenatchee, $177,500 (100); restore roadbed and install 3 mi. of 112-lb. rail, Sultan, Wash., $102,400 (100); widen embankment and install 8 mi. of 112-lb. rail, Philbin, Minn., to Gunn, $237,000 (100); widen embankment and install 7 mi. of 112-lb. rail, Gunn, Minn., to Coleraine, $190,000 (90); widen embankment and install 15 mi. of 112-lb. rail, Hillyard, Wash., to Fort Wright, $527,000 (1); widen embankment and install 12 mi. of 112-lb. rail, Blair, Mont., to Brockton, $401,600 (100); widen embankment and install 3½ mi. of 112-lb. rail, Havre, Mont., to Pacific Junction, $100,200 (100); widen embankment and install 10 mi. of 112-lb. rail, Shelby, Mont., to Ethridge, $192,700 (100); widen embankment and install 18 mi. of 112-lb. rail, Norcross, Minn., to Campbell, $423,150 (90); widen embankment and install 3 mi. of 112-lb. rail, St. Paul, Minn., $120,000 (100); widen embankment and install 10 mi. of 112-lb. rail. Wolverton, Minn., to Rustad, $283,000 (100); widen embankment and install 3 mi. of 112-lb. rail, St. Paul-Minneapolis, Minn., $247,600 (3); widen embankment and install 2 mi. of 112-lb. rail, Minneapolis, Minn., $217,000 (100); widen embankment and install 10 mi. of 112-lb. rail, Verendrye, N. D. to Genoa, $256,800 (85); widen embarkment and install 8 mi. of 112-lb. rail, Spring Brook, N. D., to Williston, $195,000 (100); widen embankment and install 8 mi. of 112-lb. rail, Minot, N. D., to Ralston, $216,000 (100); widen embankment and install 13 mi. of 131-lb. rail, Olney, Mont., to Stryker, $457,000 (45); widen embankment and install 8 mi. of 131-lb. rail, Rexford, Mont., to Stonehill, $288,000 (100); widen embankment and install 6 mi. of 112 and 131-lb. rail, Nimrod, Mont., to Essex, $202,000 (100); widen embankment and install 6½ mi. of 112-lb. rail, Dean, Wash., to Hillyard, $255,000 (100); widen embankment and install 7½ mi. of 112-lb. rail, Columbia Falls, Mont., to Whitefish, $318,000 (100).

Widen embankment and relay 22.7 mi. of branch line with secondhand, 90-lb. rail, Spokane division, Wash, $253,400 (75); widen embankment and install 15 mi. of secondhand, 90-lb. rail, Eagle Bend, Minn., $156,000 (1); widen embankment and install 14 mi. of 90-lb. and 110-lb. secondhand rail, Merrill, Iowa, to Sioux City, $181,850 (90); widen embankment and install 20 mi. of secondhand, 90-lb. rail, Crystal, N. D., to Backoo, $216,550 (100); widen embankment and install 27 mi. of secondhand, 90-lb. rail, Aloe, Mont., to Sweet Grass, $318,650 (45); widen embankment and install 8 mi. of secondhand 90-lb. rail, Paynesville, Minn., to New London, $100,975 (50). Renew ballast, Cascade division, $201,000 (90); renew ballast, Kalispell division, $205,000 (35); renew ballast, Butte division, $495,000 (50); renew ballast Dakota division $151,000 (30); renew ballast, Willmar division, $269,000 (40); renew ballast, Mesabi division, $271,000 (60); renew ballast, Spokane division, $143,000 (90); renew ballast, Butte division, $160,000 (80).

### Illinois Central

*Important Work Undertaken:* Construction of steel coaling station, cinder pit and other facilities, Carbondale, Ill., $144,000 (100); replacement of spans of the Boone River bridge with new girders, Webster City, Iowa, $106,000 (100); conversion of northward yard from a hump to a flat-switching yard, Nonconnah, Tenn., $574,100 (100).

### Illinois Terminal

*Important Work Undertaken:* Construction of shop buildings, including facilities for servicing Diesel locomotives, Madison, Ill., $100,000 (100).

### Indianapolis Union

*Grade Crossing Eliminations:* Subways: Shelby street, Indianapolis, Ind., bridge structure built by railway and street work done by city, cost divided 85 per cent to city and street railway, 15 per cent to railroad, $510,000 (100); Kentucky avenue, Indianapolis, bridge structure and street work performed by state, track and railroad facilities by railway, cost divided 10 per cent to the railway and 90 per cent to the state, $1,250,000 (1).

### Kansas City Southern

*Important Work Undertaken:* Construction of Diesel servicing and repair facilities, Pittsburg, Kan., $293,568 (100); reconstruction of superstructure and lengthening of bridge over the Arkansas river, Redland, Okla., $851,264 (100).

### Lakefront Dock & Railroad Terminal

*Important Work Undertaken:* Construction of a coal and ore-handling facility, including a yard having 56 mi. of track and capacity of 5,400 cars, three waterfront piers, three slips and many incidental buildings, Toledo, Ohio, $20,000,000 (100).

### Lake Superior & Ishpeming

*Important Work Undertaken:* Construction of 14.3-mi. extension of North Lake branch, Marquette Co., Mich., $900,000 (10).

### Laona & Northern

*First Track:* Near Laona, Wis., 0.58 mi.

### Lehigh Valley

*Grade Crossing Eliminations:* Subways: Main street, Manville, N. J., $727,800 (5).

*Important Work Undertaken:* Construction of Diesel service and repair facilities, Sayre, Pa., $242,000 (10); construction of Diesel servicing facilities, Tifft terminal, Buffalo, N. Y., $311,559 (20).

### Los Angeles Junction

*Important Work Undertaken:* Construction of classification yard, including 23,359 ft. of yard track and other incidental facilities, Los Angeles County, Cal., $165,000 (100).

### Louisville & Nashville

*First Track:* Duo, Ky., to Deane, 16.6 mi.

*Grade Crossing Eliminations:* Overcrossings: Champion, Ala., $109,000 (100); Repton, Ala., $185,000 (100); Morley, Tenn., $175,000 (100); Lewisburg, Tenn., $150,000 (100); Dryden, Va., $100,000 (100); Ranger, N. C., $150,000 (100).

*Important Work Undertaken:* Reduction of grade from a maximum of 1.31 per cent to 0.85 per cent, Benton cut, Tenn., $137,673 (100); installation of two escalators from track level to concourse, passenger station, Nashville, Tenn., $100,057 (100); construction of Diesel-locomotive repair-shop facilities, including steel and concrete building, two concrete platforms, watering and washing facilities, Louisville, Ky., $361,372 (100); reconstruction of bridge over Big Laurel river, from a deck-girder viaduct on steel towers to deck-girder spans on concrete piers designed for heavier loading, Corbin, Ky., $169,466 (100); reconstruction of bridge over West Pascagoula river, Gautier, Miss., including the building of 16 concrete-pile piers and 3 deck girders, $797,526 (100); installation of C. T. C., including necessary track changes, Irvine, Ky., to Perritt, $860,015 (100); reconstruction of transfer-table pits, South Louisville, Ky., $129,494 (100); replacement and rearrangement of mechanical facilities, and new coaling plant, Boyle, Ala., $301,291 (100); rearrangement and improvement of freight-car repair facilities, South Louisville, Ky., 178,188 (started); installation of C.T.C., including track changes, Hazard, Ky., to Blackey, $524,098 (5); installation of C.T.C., including track changes, Amqui, Tenn., to Henderson, Ky., $1,821,639 (started); improvement in weighing, billing, yard and mechanical facilities, De Coursey, Ky., $851,200 (85).

### Maine Central

*Second Track:* Pittsfield, Me., 0.17 mi.

*Important Work Undertaken:* Construction of fueling and sanding facilities for Diesel locomotives, Bangor, Me., $115,600 (50).

### Minneapolis & St. Louis

*Grade Crossing Eliminations:* Subways: 13th Street northeast, Mason City, Iowa, work done by state and financed by federal government, $150,000 (100).

### Minneapolis, St. Paul & Sault Ste. Marie

*Important Work Undertaken:* Construction of a brick-and-masonry Diesel servicing building, Minneapolis, Minn., $156,000 (100).

### Missouri-Kansas-Texas

*Grade Crossing Eliminations:* Overcrossings: U. S. highway 169, Coffeyville, Kan., 10 per cent of cost borne by the railroad, $116,080 (100); 7th street, Austin, Tex., $225,000 (100); U. S. Highway 20, Sprinkle, Tex., $206,000 (100); U. S. Highway 57, 6th street, Junction City, Kan., $150,000 (100); Dal Rock road, Dallas, Tex., entire cost borne by Dallas county, except that for rearranging telegraph lines, $60,000 (100). Subways: Gainesville, Tex., $168,000 (15). In all of these grade crossing eliminations the work of rearranging railroad facilities was done by railroad forces, and other work was performed by state forces. Entire cost, except as noted, borne by the state, with federal funds.

*Important Work Undertaken:* Installation of one new span and reinforcement of remaining spans and piers of bridge No. 656, $108,600 (100); replacement of wheel shop and installation of new machinery, Denison, Tex., $128,800 (55); construction of warehouse and platform, Houston, Tex., $100,000 (100); installation of automatic block signals, including necessary track work, Denison, Tex., to Gallagher, $354,000 (100).

### Missouri Pacific

*First Track:* QQ Junction, Ark., near Benton, to end of abandoned line, 1.26 mi.; Granite Bend, Mo., 4.08 mi.

*Grade Crossing Eliminations:* Overcrossings: State Highway 20, Barton Junction, Ark., $100,000 (100); route No. 7, Pleasant Hill, Mo., $660,000 (5); 7th street, Joplin, Mo., $400,000 (20); U. S. Highway 79, Marianna, Ark., $173,000 (10). Subways: State highway, Battlefield, Mo., $15,000 (100); connection between Tulip and Poinsett streets, Earle, Ark., $27,600 (10).

*Important Work Undertaken:* Construction of inspection pit, St. Louis, Mo., $146,300 (100); servicing facilities for Diesel locomotives, St. Louis, Mo., $250,000 (97); flood-control facilities, Reily Lake, Ill., $370,000 (100); flood-protection facilities, Menard, Ill., $1,226,000 (25); bridge over Cache river, Cache, Ill., $162,000 (40); construction of car fabricating shop, DeSoto, Mo., $750,000 (100); revision of grade and alinement, Bismarck, Mo., to Piedmont, $1,165,000 (100); construction of track and other facilities on line revision project, Arcadia, Mo., to Hogan, $248,000 (40); purchase of right-of-way and construction of culverts in connection with grade and alinement change, Vulcan, Mo., to Gads Hill, $117,000 (10); installation of automatic block signals, including incidental track work, McGehee, Ark., to Louisiana line, $219,300 (5); reconstruction of bridge, Sterlington, La., $139,800 (75); installation of C. T. C., including track changes, Pleasant Hill, Mo., to Elm Park, $241,500 (99); construction of office and storeroom, Sedalia, Mo., $297,500 (7) relocation of main track, Chamois, Mo., $113,000

(100); rearrangement of tracks for new flood wall, Kansas City, Mo., $253,400 (100); rearrangement of tracks and expansion of yard, Kansas City, Mo., $509,000 (100); construction of telephone building, Kansas City, Mo., $103,170 (45); Diesel servicing and storage facilities, Osawatomie, Kan., $598,000 (25); revision of grade and alinement, Palatin, Ark., $251,300 (started); installation of air conditioning equipment in offices, St. Louis, Mo., $196,490 (100).

(Missouri Pacific in Nebraska) *Important Work Undertaken:* Installation of two steam boilers, Falls City, Neb., $115,850 (100).

(Houston Belt & Terminal) *Grade Crossing Eliminations:* Revision of highway: New superhighway from Houston, Tex., to Galveston, constructed over tracks at two locations, expense borne by public authorities.

(Gulf Coast Lines) *Important Work Undertaken:* Installation of 76.2 mi. of C. T. C., including necessary track changes, Edmonds, Tex., to Vanderbilt, $880,800 (100).

(International-Great Northern) *Important Work Undertaken:* Construction of steel freight station, with concrete foundation and floors, Laredo, Tex., $193,000 (100).

## Nashville, Chattanooga & St. Louis

*Important Work Undertaken:* Relocation of 6.6 mi. of main track, Allatoona Reservoir area, near the Allatoona dam on the Etowah river, including the elimination of 22 curves, shortening the route by 1.6 mi., and the construction of three 115-ft. through plate girder bridges, north of Cartersville, Ga., $1,300,000 (70).

## New Orleans Public Belt

*Second Track:* New Orleans, La., 0.81 mi.

## New York Central

*Grade Crossing Eliminations:* Overcrossings: Separation of grade, State street, and freighthouse lead, Herkimer, N. Y. (70); Remsen-Boonville state highway No. 5346, Remsen, N. Y. (35). Subways: Willow freeway, U. S. 21 (relocated), Cleveland, Ohio (100); North Sandusky street, Columbus, Ohio (50). Reconstruction of Existing Grade Crossing Structures: State highway 5176, Black River, N. Y. (25); South Park avenue overcrossing, Buffalo, N. Y. (50); bridge 416, Ponda, N. Y. (10); bridge 649, Lyons, N. Y., (100); bridge 133 (Buchanan), Peekskill, N. Y. (5); bridge F-8, Roots, N. Y. (10); bridge 387, Scotia, N. Y. (10); bridge 17, Williamstown, N. Y. (started). Highway closed: Haskell Road, Moorehead, Pa. (100).

*Important Work Undertaken:* Construction of additional yard facilities, including five additional tracks, relocation of other tracks and the construction of platforms, pole lines and road, and the construction of three bridges and the building of a new yard office, East Syracuse, N. Y. (100); improvements to westbound advance yard, Selkirk, N. Y., including 8 mi. of additional track, the installation of 22 turnouts, two yard offices and a car department building (100); replacement of present bridges in kind, Albany, N. Y. (100); tilting pile-bent trestle, Iona Island, N. Y. (80); construction of standby facilities for servicing air-conditioned passenger equipment, Buffalo, N. Y. (started); installation of additional boiler in power house, Buffalo, N. Y. (90); construction of a 1,000,000-gal. fuel oil storage tank, Buffalo, N. Y. (100); construction of additional servicing facilities for Diesel locomotives, including a 1,000,000-gal. fuel oil storage tank, Harmon, N. Y. (25); alteration to track and miscellaneous servicing facilities, including signal construction, third rail work, Harmon, N. Y. (100); construction of improvements to passenger station building and platforms, Harmon, N. Y. (10); construction of a boiler water treating plant, including tanks, filters, etc., Harmon, N. Y. (started); construction of facilities for servicing Diesel locomotives, including a 1,000,000-gal. fuel oil storage tank, Minoa, N. Y. (75); construction of stand-by facilities for servicing air-conditioned passenger equipment, Mott Haven, N. Y. (50); construction of stand-by facilities for servicing air-conditioned passenger equipment, upper and lower levels, Grand Central Terminal, New York (15); extension of a.c. distributing system, Grand Central Terminal, New York (25); construction of an additional sub station at 86th street and Park avenue, New York, (100); construction of additional facilities for repairing passenger cars, Rensselaer, N. Y. (50); extension and alterations to Selkirk engine terminal, including drop pit, hoists, pole line, and various electrical and mechanical work, Selkirk, N. Y. (90); replacement of boilers in power plant, including electrical work, pump, dust collector, piping, and ash disposal facilities, West Albany, N. Y. (100).

Construction of an office building, including messroom, lockers, toilet, and stokerized boilers, Ashtabula, Ohio (100); revision and extension of enginehouse facilities, including the replacement of crane runway and installation of a new 70-ton crane, and the construction of Diesel fuel oil storage facilities (Collinwood) Cleveland, Ohio (75); replacing enginehouse roof (Lamdale) Cleveland, Ohio (100); extension of Wolf Run branch, Phillips, Ohio (100); construction of passenger terminal improvement, Toledo, Ohio (started); installation of an electric interlocking, Fostoria, Ohio (35); replace boilers in powerhouse, Gibson, Ind. (80); installation of Diesel fuel oil storage, Gibson, Ind. (80); additions, extensions and alterations to engine terminal facilities, (Englewood) Chicago (100); construction of additional Diesel fuel oil storage facilities, Chicago (70); construction of Peters Creek extension, Summersville, W. Va. (100).

(Boston & Albany) *Reconstruction of Existing Grade Crossing Structures:* First street, Pittsfield, Mass. (93); Gibbs crossing underpass, Palmer, Mass. (50).

*Important Work Undertaken:* Construction of an electric supply substation and 83 outlets for air-conditioning cars, Exeter Street yard, Huntington Avenue yard, Boston, Mass. (71); construction of fueling facilities for Diesel locomotives, including two 200,000 tanks, pump house, fire protection, platforms, drains and sanding, West Springfield, Mass. (85); construction of a repair shop for Diesel locomotives, including alterations and construction of inspection pits and platforms, drop pits, storehouse, heating and fire protection facilities, West Springfield, Mass. (45).

(Cleveland, Cincinnati, Chicago & St. Louis) *Grade Crossing Eliminations:* Overcrossings: State highway 534, New Augusta, Ind., cost to be borne 90 per cent by federal government and 10 per cent by the railroad (10). Revision of Highway: Relocation of highway 1/2, done by the state with federal funds, except the cost of right of way borne 15 per cent by the railroad and 85 per cent by the state, south of Sherwood, Ohio (100); relocation of Hartwell avenue, state route 987, together with the construction of an overcrossing with approaches, financed by the state, federal government and the city, Cincinnati, Ohio (50).

*Important Work Undertaken:* Reconstruction of arch bridge No. 47, including the extension of both sides, replacing the masonry, building up parapets and wing walls, and lining the arches, Grafton, Ohio (100); installation of automatic signals, including remote controlled switches, electric locks on hand switches, and the installation of higher speed turnouts, Columbus, Ohio, to Springfield (100); installation of automatic signals, including necessary track work, Glen Echo, Ohio, to Springfield (100); installation of automatic signals and remote control equipment at four interlockings and the installation of electric switch locks on main track switches, including the installation of high-speed turnouts, Kenton, Ohio, to Berwick (30); construction of an extension to the wheel shop, including wiring, heating, platforms, machinery foundations, tracks, office and locker rooms, Beech Grove, Ind. (100); construction of 1.52 mi. extension to Saline Valley branch, serving a coal company, Harrisburg, Ill. (100); construction of 2.8 mi. of branch line track and 1.2 mi. passing track, Pana, Ill. (100).

(Chicago, River & Indiana) *Important Work Undertaken:* Development of the LeMoyne Land industrial district, including the improvement of various streets with sewers, water mains, concrete pavement, curbs, gutter, sidewalks and street lights, 43rd street and Kildare avenue, Chicago (95).

(Michigan Central) *Grade Crossing Eliminations:* Subways: U. S. highway 112, Willow Run, Mich., work done by state highway department and railroad with federal and state funds (100).

*Important Work Undertaken:* Construction of two wet cinder pits serving four tracks and the installation of mechanical cinder handling and storage equipment, including improved arrangements of tracks, involving the building of 1.7 mi. of new track (95); installation of improved equipment, including new switchboards, circuit breakers and the construction of two circuit breaker houses, Detroit, Mich., and Windsor, Ont. (55); installation of fuel oil storage facilities for Diesel locomotives, including two 100,000 gal. tanks, a pump house, pumping equipment and piping, Detroit, Mich. (10).

(Pittsburgh & Lake Erie) *Important Work Undertaken:* Construction of new car repair facilities, including a brick building to be used for offices, locker rooms, tool room and garage, a brick paint house and brick car inspectors' office, McKees Rocks, Pa. (80); alterations in operating facilities, including installation of C. T. C. and necessary track changes, consolidation of car shop, additional yard capacity and construction of a track yard office, Pennsylvania state line to East Youngstown, Ohio (85); installation of a 120-ft. three-point turntable, including the stabilization of the existing foundation, East Youngstown, Ohio (100); construction of alterations to Wylie yard, including the rearrangement of lead tracks and the changing of No. 6 turnouts to No. 8 turnouts, Wylie, Pa. (45); installation of car weighing facilities, including the erection of a track scale, yard office and an oil and tool house, and the construction of a new scale track requiring 6,000 cu. yd. of fill, Lowelliville Junction, Ohio (55).

## New York, Chicago & St. Louis

*Grade Crossing Eliminations:* Overcrossings: Rice avenue, Girard, Pa., constructed by the state with federal funds, $194,000 (100). Subways: 83rd street, Chicago, constructed by and at the expense of the railroad, $30,160 (100).

*Important Work Undertaken:* Construction of an interlocking plant, Fostoria, Ohio, $204,500 (35); installation of C. T. C., including the extension of passing tracks, and other incidental track work, Arcadia, Ohio, to New Haven, Ind., $547,000 (80); construction of engine terminal, Calumet, Chicago, $1,352,000 (20); purchase of telegraph facilities from Western Union Telegraph Co., $581,800 (95); installation of C. T. C., including the extension of passing tracks and other track changes, Arcadia, Ohio, to St. Marys, $657,000 (89); construction of storehouse, Lima, Ohio, $507,000 (90); revision of grade and alinement, Oakland, Ohio, to Ft. Recovery, $630,000 (98); installation of C. T. C., including the extension of passing tracks, Frankfort, Ind., to Liberty, $882,000 (35); renewal of bridge, Dayton, Ind., $102,000 (45).

## New York, New Haven & Hartford

*Grade Crossing Eliminations:* Overcrossings: Extension of Wilbur Cross parkway, Hamden, Conn., constructed with state funds, $435,000 (100); approaches to Connecticut river bridge, Old Saybrook, Conn., $75,000 (100). Reconstruction of Existing Grade Crossing Structures: Mt. Wayte avenue, Framingham, Mass., with federal funds, $50,000 (100); Main street, Blackstone, Mass., with state funds, $50,000 (100); track bridge No. 29.97, Shannock, R. I., built with state and federal funds, $260,000 (25); bridge No. 77.05, Hampton, Conn., with state and federal funds, $150,000 (10); Silver street, Waterbury, Conn., with state funds, $50,000 (10); bridge No. 12.66, Braintree, Mass., $150,000 (75); Smith street, Northampton, Mass., $75,000 (15).

*Important Work Undertaken:* Installation of teletypes and associated equipment over entire system, $248,900 (50); installation of automatic signals, including track work, Holmes, N. Y., to Hopewell Junction, $112,000 (95); installation of automatic signals, including track work, Hopewell Junction, N. Y., to Poughkeepsie, $108,100 (90); installation of automatic signals, including track work, Poughkeepsie, N. Y., to Maybrook, $167,481 (started).

## Norfolk & Western

*Second Track:* Peebles, Ohio, to Mineral Springs, 4.60 mi.
*New Road Under Construction:* Cooper, W. Va., to Lick Branch, 5.15 mi.
*Grade Crossing Eliminations:* Overcrossings and Subways: (Triple-deck structure) Gilmerton, Va., joint with state, $1,100,000 (100). Subways: Elimination of two grade crossings, Bristol, Va., at railway expense, $78,000 (100).
*Important Work Undertaken:* Construction of about 8 mi. of new track (4.79 mi. a revision of alinement, and 3.25 mi. a revision of grade) including the installation of C.T.C., from Vera, Ohio, to Clare, and Peebles, Ohio, to Mineral Springs, $2,948,000 (100); construction of main spur, 5 mi. long, including 1.5-mi. siding, and 17,145 ft. of track, Tug Fork branch, W. Va., $1,253,600 (100); construction of fireproof pier, including steel and metal warehouse, two land warehouses, two gantry cranes, concrete driveways, 150-ton track scale, fumigating plant, garage nd repair shop, stevedore building and necessary tracks, Lamberts Point, Va., $5,910,000 (100); construction of new enginehouse, machine shop, office, wash and locker building, including engine-servicing facilities and track, Pulaski, Va., $227,000 (50); construction of a 3,423-ft. extension to Rex passing track, including remote-control power switches at each end; installation of two No. 20 crossovers, including signals for movement in either direction on both main tracks, Kenova, W. Va., to Rex, Ohio; installation of remote control equipment for interlocking at Ironton, Ohio; and the installation at Kenova W. Va. of an electro-pneumatic switch machine to control the operation of a new crossover and existing crossover equipped with new power switches, Kenova, W. Va., to Rex, Ohio, $252,000 (95); construction of a new brick, steel and reinforced-concrete office building, five stories high, including office furniture and steam line from powerhouse, Bluefield, W. Va., $700,000 (95); reconstruction of backwalls and piers of 20 bridges, including the installation of steel girders or pre-cast concrete slabs, Radford, Va., to Bristol, $213,850 (70); reconstruction of backwalls and piers of 10 bridges, including the installation of steel girders or pre-cast concrete slabs, Columbus, Ohio district, $114,800 (55); acquisition of land and the construction of a brick, steel, and concrete three-level passenger station, joint with the C.&O.; lower N.&W. tracks, raise C.&O. tracks, and rearrange other tracks as necessary, Waynesboro, Va., $550,000 (10); remodeling and modernization of passenger station, Roanoke, Va., $900,000 (75); installation of crossovers, turnouts, 3,956 ft. track, C.T.C. type machines and electro-pneumatic switch movements at Forest and Villamont interlockings; both tracks signaled for operation each way, Bonsack, Va., to Montvale; installation of coded track circuits, Forest, Va., to Roanoke, $466,000 (100); construction of 5.15 mi. of double-track main line, including a double-track tunnel about 7,100 ft. long; construction of new coaling station and wye, installation of position-light automatic signal system, and construction of a high and a low-tension signal transmission lines, Bluefield, W. Va., to Iaeger, and Cooper, W. Va., to Lick Branch, $11,912,000 (40); installation of two electrically-operated, revolving-belt trimmers at coal pier No. 4, and one bulldozer-type trimmer at coal pier No. 5, Lamberts Point, Va., $107,000 (100); rearrangement of engine terminal, including the extension of track layout 2,451 ft., extension of the engine inspection pit 25 ft., construction of a new single-track ash hoist, sand-storage and drying facilities, nd a new coaling station, Shenandoah, Va., $121,000 (100); modernization of wood-preserving plant, including the installation of Taylor-Colquitt vapor-drying apparatus and other incidental facilities, Radford, Va., $150,000 (20); construction of a combination brick and concrete enginehouse, machine shop, storehouse, office, icehouse, wash and locker building, including inspection pit, driving-wheel drop pit, wheel-storage track, coal, water and other facilities, Winston-Salem, N. C., $360,000 (75); installation of air conditioning equipment in the wings of both the old and new general office buildings, Roanoke, Va., $650,000 (25); installation of signaling for reverse movements on both main tracks between Naugatuck, Va., and the east end of tunnel No. 1; installation of C.T.C. from Naugatuck, Va., to Millstone yard; installation of power switches for crossovers and wye track at Naugatuck, $134,000 (100); construction of a new switching lead at the east end of passenger station and other trackage, a total of 2,683 ft.; construction of an all-relay type interlocking plant at Randolph street, Roanoke, Va., $615,800 (50); installation of C.T.C. type interlocking plant and electro-pneumatic switch movements at Walton interlocker, including remote-control switches, Pepper, Va., to Dry Branch, and at the east end of Vicker passing track; also installation of coded track circuits, Roanoke, Va., to Walton, $473,000 (20); modernization of passenger station, Lynchburg, Va., $340,000 (30); rearrangement of tracks, signal systems, and other facilities, in connection with the construction of unit No. 6, Flood Defense, Portsmouth, Ohio, to New Boston, $212,000 (90); construction of new fireproof freight station, Williamson, W. Va., $450,000 (started); modernization of passenger station and the erection of a new brick and concrete express building, Williamson, W. Va., $210,000 (started); construction of a new brick and concrete signal tower, including a new electro-pneumatic interlocking plant with necessary signal controls for N.&W. and P.R.R. movements, involving the construction of 5,767 ft. of additional track, Columbus, Ohio, $308,000 (started).

## Northern Pacific

*Grade Crossing Eliminations:* Overcrossings: Arcade St., St. Paul, Minn., work done by state under contract, with federal-aid funds, $450,000 (75); Stuart, Mont., work performed by state under contract, with federal aid funds, $165,000 (100); Selah, Wash., work performed by state under contract, with county funds, $261,000 (100); Vancouver Junction, Wash., work done by state under contract, with federal funds, $148,000 (100). Subways: Wilburton, Wash., performed by state under contract, with federal-aid funds, $75,500 (100).
*Important Work Undertaken:* Construction of additional yard facilities, including a new yard office with observation tower, a new well, a new pumphouse, including pump, and the rearrangement and extension of various yard tracks, construction of a new ladder track and new switching leads, Northtown, Minn., $333,900 (80); construction of additional freighthouse facilities, including an addition to present freighthouse, platform, concrete paving and heating and electrical facilities, Billings, Mont., $385,000 (100); construction of additions, alterations to machine shop to convert it for Diesel-locomotive repair and maintenance, Glendive, Mont., $470,000 (100); construction of brick garage attached to the freight-house, including concrete floor, Diesel oil and gasoline storage tanks, and other facilities, Butte, Mont., $140,000 (100); reconstruction of bridge at Clarks Fork river, Thompson Falls, Mont., $390,000 (100); remodeling of yard office and passenger station at Livingston, Mont., $127,500 (100); conversion of icehouse into ice manufacturing plant, including plumbing, heating, wiring, machinery and conveyors, Laurel, Mont., $452,000 (60); reconstruction of bridge, Grantsdale, Mont., $102,800 (10); construction of two concrete service pits, including drop pits, water, air, steam and drainage lines and other incidental facilities, King street, Seattle, Wash., $296,000 (100); remodeling of electric shop for repairing Diesel-electric equipment and the installation of overhead traveling cranes, including miscellaneous lighting and power facilities, South Tacoma, Wash., $228,500 (80); construction of a one-story, concrete-block building for offices and cold-storage space, Seattle, Wash., $102,500 (100); construction of new powerhouse and the installation of two high-pressure boilers and overhead steam lines, to serve depot and coach yard, Seattle, Wash., $412,000 (15).

## Northwestern Pacific

*Grade Crossing Eliminations:* Subways: Linden lane, San Rafael, Cal., with state and federal funds, $72,000 (100).

## Pacific Electric

*Grade Crossing Eliminations:* Subways: Lankershim boulevard, Universal City, Cal., constructed by the state with federal funds, $250,000 (100).
*Important Work Undertaken:* Construction of a new bridge to accommodate the extension of Arroyo Seco parkway under Sunset boulevard and Pacific Electric tracks near Figueroa street, Los Angeles, Cal., $600,000 (100).

## Pennsylvania

*Grade Crossing Eliminations:* Overcrossings: Howe's lane west of New Brunswick, N. J. (100); Schalk's road, Plainsboro, N. J. (48); Laucks road, north of York, Pa. (100); Bethel Township road, Concordville, Pa. (100); three grade crossings, West Elizabeth, Pa. (60); Columbiana, Ohio (10); flood control and grade crossing elimination project, Massillon, Ohio (25); U. S. 40, Dodson, Ohio (100); Tri-state highway, Bernice, Ill. (100); construction of new overhead bridge, Calumet parkway, Dolton, Ill. (100); U. S. 40, east of Vandalia, Ill. (75). Subways: Sulphur Springs, Arbutus, Md. (1); 12th street, Erie, Pa. (35). Revision of Highway: State route 176, west of Jersey Shore, Pa. (90). Relocation of Tracks: Second and Third Street crossings eliminated by relocating Court Street branch track, Reading, Pa. (100); Race Street grade crossing eliminated by relocating main track and retiring side track, Pottsville, Pa. (100). Approximate cost of these grade crossing eliminations, paid for by railroad, county, state and federal funds, $5,879,753.
*Important Work Undertaken:* Installation of air conditioning standby facilities, Sunnyside yard, Long Island City, N. Y. (100); installation of additional air conditioning standby facilities for tracks 17-28 inclusive, Sunnyside yards, Long Island City, N. Y. (started); rearrangement of tracks and driveways, including repaving, to permit handling of perishable freight, Ball Ground yard, Jersey City, N. J. (100); rearrangement of tracks and installation of paved driveways at Produce yard, Waldo Avenue yard, Jersey City, N. J. (100); relocation of passenger station facilities, Burlington, N. J. (20); replacing trolley wire with heavier wire, of 300,000 cir. mils at various locations on tracks 1 and 4, Newark, N. J., to the Pennsylvania state line (100); improvements at boiler plant to provide increased steam for thawing frozen coal, South Amboy, N. J. (80); construction of new store for rental, installation of a shoe repair shop and additional air conditioning equipment at the central plant, Pennsylvania Station, New York (100); revision of alinement to eliminate speed restrictions, Millersburg, Pa. (65); revision of alinement to remove speed restrictions, Kinkora Heights, Pa., (90); revision of alinement to eliminate speed restrictions, Huntingdon, Pa., (100); construction of Diesel-locomotive facilities, Harrisburg, Pa., (100); construction of Diesel-locomotive terminal facilities, Enola, Pa., (72); remodeling railroad buildings to provide express-terminal facilities and for the relocation of Calvert Street passenger station, Baltimore, Md., (100); installation of two moving stairs at Union Station, Baltimore, Md. (100); installation of crossovers and interlockings, McVeytown, Pa. (35); revision of alinement to eliminate speed restrictions, Watsontown, Pa. (88); development of industrial sites, Bladensburg road, Washington, D. C. (40); installation of moving stairs in Broad Street suburban station, Philadelphia, Pa. (25); construction of fuel-oil storage facilities, Harrisburg, Pa. (90); construction of Diesel-locomotive servicing facilities, including work pit, East Altoona, Pa. (15); raising bridge and tracks over Lycoming creek, in connection with a flood-protection project, Williamsport, Pa. (73); raising bridge and tracks over Shamokin creek, in connection with flood-protection project, Sunbury, Pa. (95); construction of an industrial side track to serve several industries, Baltimore, Md. (100); construction of an extension to Pier No. 1, Baltimore, Md. (5); construction of a spur and yard track, Sparrows Point, Baltimore, Md. (75); construction of an additional apron track, Pier No. 53, Delaware river, Philadelphia, Pa. (95); construction of a new station, Curtis Park, Academy, Pa. (75); construction of an additional inspection pit and platforms, Ivy City, Washington, D. C. (100); construction of an additional storehouse and other Diesel facilities, Ivy City, Washington, D. C. (90); consolidation of power plant, Ivy City, Washington, D. C. (15); modernization of wheel-shop facilities, Enola,

Pa. (1); construction of additional facilities for handling Diesel electric switching locomotives, Philadelphia, Pa. (50).

Construction of two concrete platforms between tracks in yard "D" passenger terminal, Pittsburgh, Pa. (100); construction of additional "AC" standby facilities for servicing passenger cars, Pittsburgh, Pa. (100); completion of step 1, passenger-terminal improvements, Pittsburgh, Pa. (100); constructon of fueling facilities for Diesel-electric locomotives, Pitcairn, Pa. (100); construction of new steam line connecting with the Allegheny County Steam Heating Company, Pittsburgh, Pa. (100); construction of facilities for icing passenger cars, Pittsburgh, Pa. (75); construction of fueling facilities for Diesel locomotives, Gallitzin, Pa. (75); reconstruction of bridge, Warren, Pa. (50); construction of new coaling station, Truxall, Pa. (10); revision of alinement and grade, due to construction of flood-control dam by the U. S. government, Blairsville, Pa., to Avonmore (98); construction of a middle siding, 1.6 mi. long with remote control switches between main track and siding, east of Blairsville, Pa. (100); reconstruction of bridge, Buffalo, N. Y. (15); reconstruction of bridge, Roslyn, Pa. (100); reconstruction of bridge, Powhatan, Ohio (10); construction of a new passenger station, Youngstown, Ohio (100); reconstruction of bridge, Holmesville, Ohio (100); reconstruction of bridge, Fredericksburg, Ohio (100); construction of fueling facilities for Diesel locomotives, Cleveland and Bedford, Ohio (20); replacement of three 300-hp. boilers with two water-tube boilers, dock No. 24, Cleveland, Ohio (30); extension of eastward yard and provision of a new water station, Bedford, Ohio (100); improvement of dock No. 3 for industrial development, Cleveland, Ohio (4).

Construction of facilities for servicing Diesel locomotives, including the construction of a service building, 12th and 18th streets, Chicago (75); construction of modern car-servicing facilities and improvements to old facilities in 12th Street coach yard, Chicago (100); construction of additional facilities to handle Diesel locomotives in 12th Street coach yard, Chicago (100); construction of a two-story brick building for the dining car commissary department in 12th Street coach yard, Chicago (100); construction of an extension to enginehouse, 55th street, Chicago (100); construction of additional facilities for servicing Diesel locomotives at 59th Street enginehouse, Chicago (100); construction of an extension to six stalls in enginehouse and installation of a drop table for Q-2 locomotives Fort Wayne, Ind. (35); construction of extension to 11 stalls in enginehouse for Q-2 locomotives, Crestline, Ohio (35); installation of fueling and water facilities for Diesel passenger locomotives, Crestline, Ohio (100); construction of fueling facilities and oil storage for Diesel freight locomotives, Crestline, Ohio (100); construction of additional tracks in Bay Junction yard, Sandusky, Ohio (100); installation of fueling facilities for Diesel switching locomotives, Rose Lake, Ill. (100); installation of fueling and water facilities for Diesel locomotives to passenger station, Terre Haute, Ind. (100); replacing mechanical interlocking with electropneumatic interlocking at "CW" Tower, Columbus, Ohio (started); ecnstruction of facilities for the storage, repair and servicing of freight Diesel locomotives at Yard "A", Columbus, Ohio (100); construction of additional relay tracks in Grogan yard, Columbus, Ohio (85); enlargement of enginehouse facilities, including the extension of stalls, extension of engine pit, construction of a new roof, installation of smoke jacks, and improvements of track layout, St. Clair avenue, Columbus, Ohio (90); construction of a service building for away-from-home trainmen and enginemen, Columbus, Ohio (100); extension of tracks in Undercliff yard, Cincinnati, Ohio (75). Approximate cost of all the above improvement work, $36,284,733.

(Long Island) *Grade Crossing Eliminations:* Subways: Two-track railroad, raised about 18 ft. on earth embankment for 3.5 mi. and four-track railroad raised about 18 ft. on earth embankment for 1 mi.; construction of five new stations and platforms, and steel and concrete railroad bridges over 12 streets. Old Southern-Rosedale, Long Island, N. Y. (6); two-track railroad raised about 18 ft. for 10,000 ft., including the construction of steel-and-concrete bridges; and construction of 2,400 ft. of continuous slab viaducts; construction of a new station and high-level, concrete, island platform, eliminating 11 grade crossings, Rockville Center, Long Island, N. Y. (1). Approximate cost of these projects, borne by the state and railroad, $14,255,000.

*Important Work Undertaken:* Removal of existing rotary converter equipment and replacement with mercury arc rectifier and associated equipment at substation, Little Neck, N. Y. (100); construction of mercury arc rectifier substations at 13 locations in present electrified territory (60); construction of new passenger stations and rehabilitation of exisiting station facilities at Syosset, N. Y., Cold Spring Harbor and Kings Park (100). Approximate cost of the above projects $5,297,135.

## Pittsburgh & West Virginia

*Important Work Undertaken:* Installation of C.T.C., including track changes, Connellsville, Pa., to Pittsburgh Junction, Ohio, Pierce, Pa., to Clairton, and Longview, Pa., to Mifflin, a total of 120.6 mi., $1,112,000 (30).

## Reading

*Important Work Undertaken:* Strengthening of bridge over Schuylkill river at West Falls, Philadelphia, Pa., $181,000 (100); improvement of coach servicing facilities in Huntingdon Street Yard, Philadelphia, Pa., $175,000 (100); renewal of train-shed roof, Reading Terminal, Philadelphia, Pa., $220,000 (100); improvement to terminal station building, including new electric stairways, ticket offices, stores, Reading Terminal, Philadelphia, Pa., $1,250,000 (50); reconstruction of two cold-storage rooms in Reading Terminal market, Philadelphia, Pa., $120,000 (100); reconstruction of bridge over Vine street, work done in conjunction with the widening of street by the Pennsylvania department of highways, Philadelphia, Pa., $2,000,000 (1); reconstruction of bridges over Lycoming creek and Millers run, including the raising of tracks, in connection with Susquehanna River flood control, Williamsport, Pa., $913,000 (100); strengthening of six bridges, Port Reading branch, $244,000 (100).

## St. Louis-San Francisco

*Grade Crossing Eliminations:* Overcrossings: State highway 15, New Albany, Miss., $33,000 (100); Byers avenue, Oklahoma City, Okla., $523,000 (25). Subways: Kansas avenue, Springfield, Mo., $300,000 (100).

*Important Work Undertaken:* Construction of Diesel repair and servicing shop, Springfield, Mo., $1,120,000 (70); construction of new yard, and other facilities, Springfield, Mo., $2,400,000 (35); construction of Diesel locomotive shop, Lindenwood, Mo., $267,000 (100); construction of a new line 7.2 mi. long, around reservoir site, handled by U. S. Engineers, Wister Dam, $700,000 (35).

## St. Louis Southwestern

*Grade Crossing Eliminations:* Front street, Tyler, Tex., constructed by the state with state and federal funds, $75,000 for structure only (100).

## Seaboard Air Line

*Important Work Undertaken:* Installation of automatic signals, including necessary track work, Coleman, Fla., to Tampa, $900,000 (100); installation of automatic signals, including necessary track work, Coleman, Fla., to Miami, $2,800,000 (70); installation of automatic signals, including necessary track work, Gross, Fla., to Starke, $900,000 (100); installation of cab signals, including necessary wayside work, Gross, Fla., to Starke, $250,000 (100); installation of cab signals, including necessary wayside work, Coleman, Fla., to West Palm Beach, $960,000 (80); replacement of existing 114-ft. swing-type, girder drawspan, over Ogeechee river, with one 57-ft. deck plate-girder span and one 57-ft. through plate-girder span, including the construction of two concrete piers, Richmond Hill, Ga., $163,000 (100); replacement of bridge over the Chattahoochee river, consisting of one 229-ft. swing-type through-truss drawspan, one 103-ft. through-truss span and one 30-ft., deck plate-girder span, with one 157-ft. vertical-lift drawspan, one 154-ft. through-truss span, and one 66-ft. through-truss span, near Omaha, Ga., $580,000 (65); replacement of Wateree River bridge, consisting of two 150-ft. through-truss spans with one 279-ft. through-truss span and one 25-ft. beam span, including the construction of a concrete pier, and the encasement of an existing pier, near Camden, S. C., $242,000 (100); construction of a concrete trestle, near Jamestown, S. C., $194,000 (100); construction of a warehouse for lease, Jacksonville, Fla., $150,000 (20); construction of industrial tracks, Lumberton, N. C., $168,000 (100); construction of tracks and other facilities, central Florida phosphate territory, $464,000 (100); construction of a packing house, Parker, Fla., $140,000 (100); construction of tracks to serve phosphate mine, Durant, Fla., $116,000 (20); construction of a freight station, Atlanta (Howells), Ga., $300,000 (5).

## Southern

*Grade Crossing Eliminations:* Overcrossings: Woodbury, Ga., constructed by state with federal funds (2); Meriwether street, Griffin, Ga., constructed by the railway with city and railway funds (100); new bridge over the railway and French Broad river, Asheville, N. C. constructed by the state with federal funds (40); Conover, N. C., constructed by state with federal funds, (100); Fletcher, N. C., constructed by the state with federal funds, (100); East Parkway, Memphis, Tenn., constructed by the state with federal and railway funds, $700,000 (10); Bealeton, Va., constructed by the state with federal funds (100); Springfield, Va., constructed by the state with federal funds, (100); access highway to Wilson Dam, Sheffield, Ala., constructed by the T. V. A., at its expense (100); Guthrie, N. C., constructed by the state with federal funds, (100); South Boston, Va., bridge over railroad and river, constructed by the state with federal funds, (10); Blacksburg, S. C., constructed by the state with state funds, $40,000 (2); Innis street, Salisbury, N. C., constructed by the state with federal funds (100); Sulphur Springs, N. C., constructed by the state with federal funds, (100); Danville, Ky., constructed by the state with federal and railway funds (75); Elysian Fields avenue, New Orleans, La., constructed by the city with city and railway funds, $1,500,000 (8). Subways: Main street, Clinton, Tenn., constructed by the state with state and railway funds, $106,000 (100); Doraville, Ga., constructed by the state with federal funds (100); Toccoa, Ga., constructed by the state with federal funds (100); Loop road, Orangeburg, N. C., constructed by the state with federal funds (100); Rock Hill, S. C., constructed by the state with federal funds (2); Iowa avenue, Memphis, Tenn., constructed by the state with federal funds (2); Gentilly road and Peoples avenue, New Orleans, La., constructed by the state with federal funds (100). Reconstruction of Existing Grade Crossing Structures: First avenue, Birmingham, Ala., reconstruction of bridge over four railroads, work done by the state with federal and railroad funds $2,500,000 (5); reconstruction of bridge at new location, Garvey avenue, Elsmere, Ky., constructed by the railroad with railroad and city funds, $29,000 (5); Eleventh street, Chattanooga, Tenn., work done by the city with city, state and railroad funds (10); Constitution, Ga., widen overhead bridge, work done by state with federal funds (100); remodel subway, Rome, Ga., work done by the state with federal funds (50); replacement of overhead bridge at new location, Fairfax, Va., work done by the state with federal funds (100); Moccasin Gap, Va., work done by the state with federal funds (5); Bearden, Tenn., work done by the state with federal funds (100); Phelps, Ga., work done by the state with federal funds (100); Princeton, N. C., work done by the state with federal funds (100); Liberty, S. C., work done by the state with federal funds (1).

*Important Work Undertaken:* Replacement of a timber trestle with embankment, including construction of a double concrete arch culvert, near Shelbyville, Ky., $155,800 (100); replacement of steel viaduct, with a deck-plate-girder bridge, on new masonry, over North Edisto river, near Pelion, S. C., $110,000 (100); re-

(*Continued on page 252*)

# FOR DEPENDABLE OPERATION AND ECONOMICAL MAINTENANCE

## *Use these Franklin Products*

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**THE FRANKLIN SYSTEM of STEAM DISTRIBUTION**
*increases speed and hauling capacity, saves fuel*

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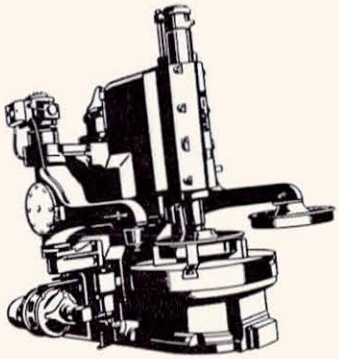
# STEAM LOCOMOTIVES

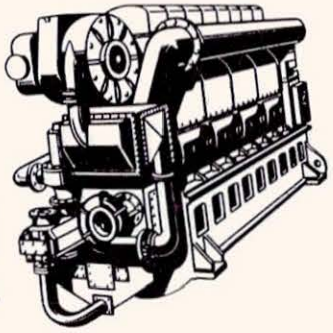
You have known us for our steam power — for such modern locomotives as the 2-6-6-6's and 4-8-4's we delivered to the C&O last year, or the thirty-two 2-8-4's we are currently building for the L&N and the Nickel Plate. We will continue to build — and improve — this type of power.

## . . . and these other products as well



**Machine Tools.** You know our machine tools by the name "Niles." Two that are of particular interest to almost every railroad at this time are the hydraulic car-wheel borer — which saves as much as 15 minutes in floor-to-floor time per wheel — and the even newer profiling attachment which permits extremely accurate wheel turning with single tools, making possible remarkable savings in time.

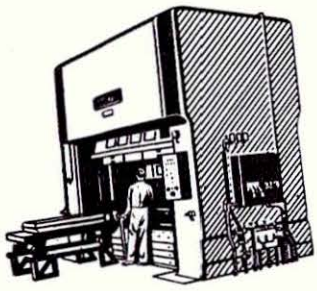
**Diesels.** You have recently seen our announcements on two major developments in the diesel field. The new Hamilton 9x12 — an engine developed from the ground up for railroad motive power — has impressed everyone who has seen it. Our new Dual-Fuel will interest you if you have gas available and can use stationary engines of 2000 hp and up.



**A letter or call to any Lima-Hamilton office, or to Lima-Hamilton Corporation, 60 East 42nd Street, New York 17, N. Y., will bring you information on any of these equipments.**

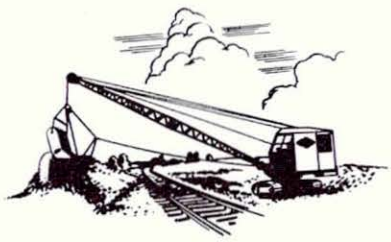
# DIESEL SWITCHERS

Now you meet, for the first time, our new 1000-hp diesel switcher. It is the country's latest development for heavy-duty railroad service. Its design is advanced — and sound. Three major roads have already placed orders for these units.



**Presses.** Those who use large presses know our Hamilton line. A new large triple-action draw press — much simpler in construction, much simpler to maintain — has been very well received in the automotive field where it has improved quality of stampings, increased die life. It should be seen by everyone who builds railroad cars or car members.

**Shovels, cranes and draglines** carrying the name "Lima" are familiar to all of you in maintenance-of-way work. We're proud of their reputation for staying on the job — of the records they have set for more output at a lower cost and with a minimum of down time.



**DIVISIONS:** *Lima, Ohio*—Lima Locomotive Works Division; Lima Shovel and Crane Division. *Hamilton, Ohio* — Hooven, Owens, Rentschler Co.; Niles Tool Works Co. *Middletown, Ohio* — The United Welding Co.

**PRINCIPAL PRODUCTS:** Locomotive; Cranes and shovels; Niles heavy machine tools; Hamilton diesel and steam engines; Hamilton heavy metal stamping presses; Hamilton-Kruse automatic can-making machinery; Special heavy machinery; Heavy iron castings; Weldments.

LIMA HAMILTON CORPORATION

# Construction Activity Increases

(*Continued from page 248*)

placement of a through truss bridge with deck plate girder bridge on new masonry, over Broad run, near Bristow, Va., $186,000 (100); replacement of a steel viaduct with embankment and concrete pipe culvert, Millers Hollow, near English, Ind., $231,700 (35); replacement of a steel bridge over Tombigbee river with new steel lift spans, approaches and piers, Jackson, Ala., $1,970,000 (10); replacement of bridge, including the grading for new approaches, and relocation in connection with Wolf Creek dam project, Burnside, Ky., $4,000,000 (2); construction of a concrete, brick and steel building for heavy and running repairs to Diesel locomotives, including a one story and basement machine shop, Chattanooga, Tenn., $890,537 (100); construction of a concrete, brick and frame passenger station, including a butterfly shed, Sheffield, Ala., $176,000 (100); construction of repair facilities for Diesel locomotives, including inspection pit, platforms and a drop table pit, in the existing erecting shop, Pegram shop, Atlanta, Ga., $361,000 (100); construction of new interlocking plant, installation of inter-yard communication system, construction of additional yard tracks and the alteration of existing tracks, Inman yard, Atlanta, Ga., $1,929,000 (1).

(Carolina & Northwestern) *Important Work Undertaken:* Alteration of shop for Diesel operation, Hickory, N. C., $108,052 (100).

(Danville & Western) *Important Work Undertaken:* Construction of two-mile spur track, to serve the Duke Power Company, Meadow Summit, N. C., $123,000 (100).

## Southern Pacific

*First Track:* Cordes, Ore., to North Bend, 0.62 mi.; Coalca, Ore., to Pulp, 0.37 mi.; Madera, Cal., to end of branch, 0.46 mi.

*New Road Under Construction:* Jasper, Ore., to Lookout (relocation), 23.06 mi.; Eder, Cal., to Andover (relocation), 1.80 mi.

*Grade Crossing Eliminations:* Overcrossings: South San Francisco, Cal., with state and federal funds, $1,018,000 (100); Santa Barbara, Cal., with state and federal funds, $982,000 (100); Spreckles Junction, Cal., with state and federal funds, $188,000 (100); Woodford, Cal., with state and federal funds, $153,000 (100); Tehachapi, Cal., with state and federal funds, $218,000 (100); Oil Junction, Cal., with state and federal funds, $232,000 (100); Ravenna, Cal., with state and federal funds, $236,000 (100); Auburn, Cal., with state and federal funds, $105,000 (100); Kaiser, Cal., with state and federal funds, $200,000 (100); Oakland, Cal., with state and federal funds, $1,939,000 (100); Wilmington, Cal., with state and federal funds, $909,000 (100); Hornbrook, Cal., with state and federal funds, $285,000 (100); Oakland, Cal., with state and federal funds, $454,000 (100); Oakland, Cal., with state and federal funds, $1,340,000 (100); Fresno, Cal., with state and federal funds, $825,000 (50); White Rock, Cal., with state and federal funds, $55,000 (15); Waldorf, Cal., with state and federal funds, $44,000 (75); 9 crossings, El Paso, Tex., cost borne jointly by the State of Texas, City of El Paso, Texas & Pacific, Union Depot Company, and the Southern Pacific, $5,480,000 (5); Wilmington, Cal., with state and federal funds, $308,000 (100).

Subways: Auburn, Cal., with state and federal funds, $96,000 (100); Aptos, Cal., with state nd federal funds, $184,000 (90); Aptos, Cal., with state and federal funds, $170,000 (90); Sacramento, Cal., with state and federal funds, $677,000 (15); Roseville, Cal., with state, federal and railroad funds, $1,324,000 (5); Oakland, Cal., with state and federal funds, $394,000 (10); Reconstruction of Existing Grade Crossing Structures: El Rio, Cal., widening underpass, with state and federal funds, $136,000 (5).

*Important Work Undertaken:* Signal respacing program, system, $340,000 (100); installation of C. T. C., including necessary track changes, Alhambra, Cal., to Colton, $1,210,000 (100); reconstruction of Pintado Canyon viaduct, Arabella, N. M., $115,000 (25); renewal of 9,426 ft. of steel pipe, replacement of 6,790 ft. of 21-in. wood-stave pipe with 18-in. steel pipe, and replacement of 50,160 ft. of 10-in. wood pipe with Transite pipe, as a part of a program of renewing the 130-mi. Bonito pipe line, Tecolote-Gallinas, N. M., $300,000 (15); enlarge tunnel No. 13, renew its timber lining on continuous concrete footings and construct 20 ft. of concrete mud-shed on its east end, Gibson, Cal., $150,000 (10); construction of 11,125 ft. of track, as an auxiliary yard to serve industries, Mulford, Cal., $126,000 (80); construction of 21,127 ft. of siding, a lead and industrial track to serve a power plant, railroads cost $91,000, industry's cost $99,000 (10); construction of 14,200 ft. of interchange track with the Eagle Mountain, Ferrum, Cal., cost borne $71,000 by the Southern Pacific, and $75,000 by the Eagle Mountain (100); construction of 7,830 ft. of track for interchange with Weyerhauser Timber Company, Sutherlin, Ore., cost borne by the railroad $29,260, by the industry $37,520 (100); extension of double track, involving the construction of 9,100 ft. of track and other changes, Taylor, Cal., $103,000 (100); construction of 1,778 ft. of track and 3 switches, the conversion of 1,998 ft. of sidetrack to main track, shifting of 2,421 ft. of track, the construction of 250 ft. of snowshed with a sprinkler system, all to provide a 100-car middle siding, Troy, Cal., $101,000 (100); extension of 12 sidings to a 100-car capacity, Yuma, Ariz., to Lordsburg, N. M., $402,000 (100); construction of the third step in providing Diesel locomotive servicing facilities, including a steel frame enginehouse, and storage building, complete with pits, platforms, fuel-oil lines, etc., Taylor, Cal., $787,000 (70); construction of modern station and platform, Watsonville, Cal., $100,000 (100).

(San Diego & Arizona Eastern) *Grade Crossing Eliminations:* Overcrossings: La Mesa, Cal., state and federal funds, $60,000 (30).

(Texas & New Orleans) *Grade Crossing Eliminations:* Overcrossings: Austin, Tex., work performed by the state with state and federal funds, $250,000 (95). Subways: Ft. Worth, Tex., work done by state with state and federal funds, $250,000 (100); San Antonio, Tex., work done by state with state and federal funds, $150,000 (35); Lufkin, Tex., work done by the state with state and federal funds, $202,000 (30).

## Spokane, Portland & Seattle

*Important Work Undertaken:* Construction of fill to replace 7,128 lin. ft. of pile trestle and retrieve four trestle openings, Astoria, Ore., $468,939 (100); line 3,790 lin. ft. of tunnel with concrete, Cornelius tunnel, Rockton, Ore., $329,500 (100); revision of alignment, M. P. 90.5, Oregon Trunk, $186,347 (100); line tunnel No. 1 with concrete, Oregon Trunk, $151,000 (100); construction of reinforced concrete repair shop, Vancouver, Wash., $124,400 (100).

## Terminal Railway, Alabama State Docks

*Important Work Undertaken:* Construction of additional yard facilities, including 5 tracks, 13 turnouts, and 11,350 ft. of track, North yards, Mobile, Ala., $97,171 (38).

## Texas & Pacific

*New Road Under Construction:* Villa Platte, La., to Opelousas, 15.3 mi.

*Grade Crossing Eliminations:* Overcrossings: East of Denton, Tex., state highway 24, constructed by the state with federal funds, $745,000 (started); U. S. Highway 80, near Putnam, Tex., constructed by the state with federal funds, $565,000 (35); U. S. Highway 80 (truck route), El Paso, Tex., constructed by the state with federal funds, joint T.&P. Southern Pacific, $505,000 (95). Subways: Highway 550, Rosedale street, Ft. Worth, Tex., constructed by the state with federal funds, $75,000 (started).

*Important Work Undertaken:* Construction of a one-story motor transport garage of reinforced concrete, brick and steel, Dallas, Tex., $163,000 (10); construction of a freight terminal, including a two-story headhouse, and three platforms, built of reinforced concrete, steel, brick and stone, $1,190,000 (60); raising grade of the main line approximately 27 ft. across Morganza floodway for 2 mi. (grading and drainage structures only) McNeely, La., to Red Cross, $1,350,000 (80); construction of a reinforced concrete trestle, totaling 16,000 lin. ft., Morganza Floodway, La., $4,000,000 (2).

## Toledo Terminal

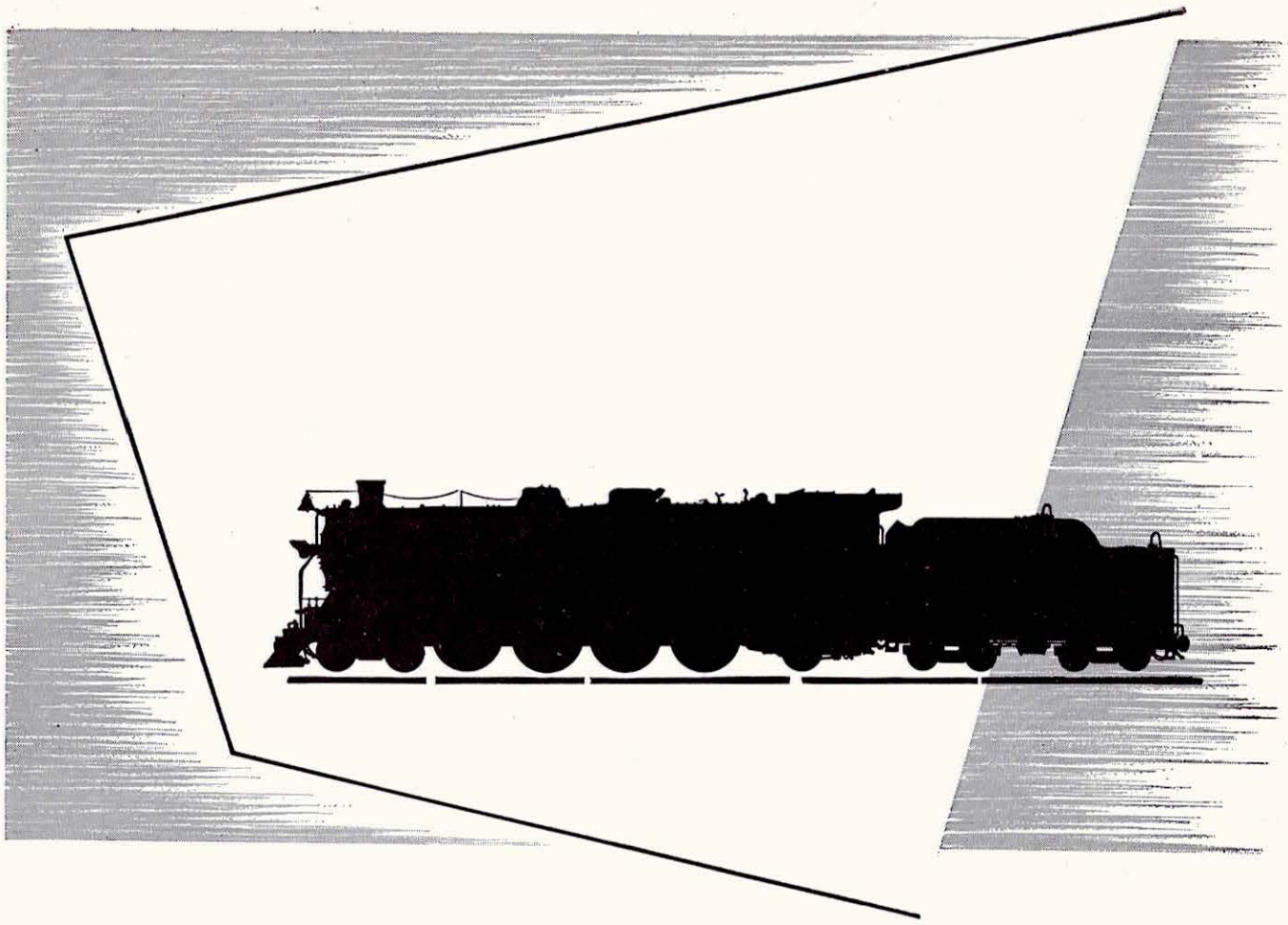
*Important Work Undertaken:* Installation of automatic block signals between Vickers, Ohio, and Ironville, $144,183 (100).

## Union Pacific

*Grade Crossing Eliminations:* Overcrossings: Sage, Wyo., State Highway 89, constructed by the state and federal government, $115,000 (100). Subways: Adrian, Ore., State Highway 455, constructed by state and federal government, $70,000 (100). Reconstruction of Existing Grade Crossing Structures: Bridge 89.35 near Gateway, Oregon Bend branch, replacing a 15-span timber trestle, with a drainage culvert and a reinforced concrete box underpass, work performed by and at the expense of the railroad, $107,460 (100).

*Important Work Undertaken:* Construction of an addition to Terminal Railway Post Office building, Council Bluffs, Iowa, $100,000 (100); replacement of eight elevators in headquarters building with modern equipment, Omaha, Neb., $400,000 (65); acquisition of 213 acres of right-of-way and construction of 31,085 ft. of first and second main track and a car-retarder yard consisting of 276,765 ft. of track, North Platte, Neb., $3,406,000 (100); expansion of freight house facilities on new property, including the replacement of freighthouse and 1,360 ft. of track, with a new freighthouse and 23,930 ft. of track adjacent to classification yard, North Platte, Neb., $909,750 (25); installation of automatic cab controlling circuit and the replacement of 227 semaphore signals with 200 color light signals, including the rearrangement of pole line, Laramie, Wyo., to Green River, $1,241,966 (40); construction of 2½ mi. of double track, including one bridge, on new right-of-way, Thayer Junction, Wyo., $1,159,607 (75); construction of one-story addition to warehouse, and one-story addition to a bakery building under lease at Denver, Colo., $295,834 (100); construction of about 9 mi. of yard track, and shifting of 2 mi. of other track, Kansas City, Kan., $265,043 (100); replacement of a 12-span pile trestle, with two 90-ft. T. P. G. spans, Belvue, Kan., $100,000 (50); raise the grade of track a maximum of 8 ft. for 4 mi. at two locations between Wamego, Kan., and Manhattan, $263,935 (100); replacement of automatic color light signals, altering an overlap system to absolute permissive block operation, Sharon Springs, Kan., to Denver, Colo., $289,369 (65); replace pile piers and pile trestle approach with concrete piers and concrete abutments, Hardin, Colo., $110,424 (100); acquisition of 700 acres of right-of-way, and construction of 4.62 mi. of new westbound main track and a passing track, including a reinforced concrete tunnel, 6,700 ft. long, and an interlocking plant at each end, Aspen, Wyo., to Altamont, $7,713,340 (65); acquisition of 329 acres of right-of-way and construction of 21.52 mi. of industrial main spur, plus side track and wye, Ft. Hall, Idaho, $1,090,700 (100); replacement of semaphore signals with color-light signals, on different spacing, including the extension of side tracks, Ogden, Utah to McCammon, Idaho, $1,517,080 (70); rearrangement of Union Pacific and joint Denver & Rio Grande Western, track for interchange with the Salt Lake, Garfield & Western, including the construction of an interlocking plant, joint with the Western Pacific, Salt Lake City, Utah, $137,067 (50); construction of fireproof building, including the installation of equipment for C.T.C. operations, between Salt Lake City, Utah, and Milford, $130,836 (100); construction of a one-story reinforced concrete office and warehouse building, including covered platform, Boise, Idaho, $190,000 (100); construction of more than 6 mi. of yard track, and relaying of rail, including the relocation of track scale, signal and telegraph lines, Nampa, Idaho, $316,560 (100); construction of two ski lifts and a new ski course, Sun Valley, Idaho, $225,000 (100); replacement of a ski lift in a new location, Sun Valley, Idaho, $136,525 (100).

Construction of warehouse, including grading, paving, and unloading platform and tracks, Albina, Ore., $122,992 (100); construction of a one-story concrete warehouse, including an office



# *The Steam Locomotive is still the wheel-horse*

Some four-fifths of the nation's rail traffic today is hauled by steam motive power. And much of the traffic load will be moved by steam for many years to come.

Under such conditions it is vital – from the financial angle – to get the most profitable performance possible from existing steam locomotives.

Many of these can be made to operate at much greater efficiency by the installation of Security Circulators to better their steaming qualities – and the gain in efficiency will rapidly repay the installation costs.

* * *

For nearly forty years American Arch has been designing and furnishing arch brick for coal-burning locomotives. Now American Arch has introduced the Security Dutch Oven for oil-burning steam locomotives.

This refractory retort increases efficiency of combustion and aids in improving steaming qualities.

## *American Arch Company Inc.*

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wing, paving and a spur track, Seattle, Wash., $316,000 (75); construction of a warehouse building of masonry construction, Spokane, Wash., $173,000 (100); replacement of timber lining and portals, Olympia Bridge tunnel, No. 26, with reinforced concrete inside of timber lining, $210,400 (100); installation of 329 mi. of C.T.C., including necessary track changes, Caliente, Nev., to Salt Lake City, Utah, $4,865,011 (100); installation of 59 mi. of C.T.C., including the construction of 3.95 mi. of second main track on which C.T.C. operation in both directions was arranged, Riverside, Cal., to Los Angeles, $2,831,485 (25); installation of water main, sewer and storm drain, replacement of tracks in a new location, and construction of paving, Los Angeles, Cal., $133,692 (100); construction of fireproof two-story office building, and a one-story freight station with covered platform and concrete pavement, including the construction of addditional yard trackage, and retirement of the old passenger station, Boise, Idaho, $223,105 (100); construction of addition to present building, and repaving of roadway, Portland, Ore., $137,700 (100); replacement of a 15-span timber trestle, 66 ft. high with a reinforced concrete box underpass, and a corrugated, galvanized-iron pipe drainage culvert, Gateway, Ore., $107,460 (100); replacement of a 17-span timber trestle, 65 ft. high, with a concrete-lined drainage tunnel, Gateway, Ore., $107,070 (100).

### Virginia & Carolina Southern

*First Track:* Lumberton, N. C., to Capol, 2.02 mi.

### Virginian

*First Track:* Wyco, W. Va., to Lane, 2.19 mi.

*Grade Crossing Eliminations:* Overcrossings: State route 11, Kumas, Va., constructed by the state, with federal aid, $367,834 (100); concrete and steel structure over the Virginian and Norfolk & Western, Salem, Va., constructed by the state, $558,936 (90).

*Important Work Undertaken:* Construction of additions to and rehabilitation of Narrows power plant, Narrows, Va., $5,400,000 (60); installation of two drop tables and retirement of drop pits, Victoria, Va., $52,000 (100); construction of additions to enginehouse, Victoria, Va., $130,000 (100); improvements to water-supply facilities, Princeton, W. Va., $55,000 (100); construction of covered extension to crane runway, Princeton, W. Va., $53,000 (100); extension to powerhouse, including the installation of additional electrical equipment, Princeton, W. Va., $140,000 (100).

### Wabash

*Grade Crossing Eliminations:* Subways: Romulus, Mich., Wayne road, $350,000 (100); U. S. 36, Arnold, Ill., $385,000 (100).

*Important Work Undertaken:* Expansion of yard, Moberly, Mo., $105,000 (100); installation of C.T.C., Montpelier, Ohio, to New Haven, $225,000 (85); reduction of curvature and the construction of an interlocking plant, Bement, Ill., $100,000 (100).

### Western Maryland

*Important Work Undertaken:* Construction of a pontoon transfer bridge, Sparrows Point, Baltimore, Md. $400,000 (100); construction of a 300-ft. extension to pier No. 6, Port Covington, Baltimore, Md. $445,000 (90).

### Wheeling & Lake Erie

*Important Work Undertaken:* Reconstruction of bridge No. 9.81, Mingo Junction, Ohio, $100,000 (100); electrification of movable-span bridge over Maumee river, Toledo, Ohio, $173,000 (15); construction of new yard office and locker building, Toledo, Ohio, $108,000 (20); construction of car department building, Brewster, Ohio, $167,000 (80).

## CANADA

### Canada & Gulf Terminal

*Important Work Undertaken:* Construction of fireproof station building, Matane, Que., $160,000 (10); construction of fireproof freight shed, Matane, Que., $50,000 (100).

### Canadian National

*First Track:* Deschampneuf, Que., to end of line, 27 mi.

*Grade Crossing Eliminations:* Overcrossings: John C. Lodge expressway, Detroit, Mich. (100). Subways: Pembina Highway, Winnipeg, Man. (100). Reconstruction of Existing Grade Crossing Structures: Abenakis Station, Armagh subdivision, Que. (50); Queen street, Parkdale, Ont. (65); Eglington avenue, Toronto, Ont. (50); King street, Toronto, Ont. (50); Mile Post 77.87 Brazeau subdivision, Alta. (50); Mile Post 117.2, Okanagan subdivision, B. C. (50); Mile Post 97.6, Okanagan subdivision, B. C. (50); Military street, Port Huron, Mich. (50).

*Important Work Undertaken:* Strengthening of steel bridges, Cascapedia and Chandler subdivisions, N. B. (100); installation of boilers in powerhouse, Moncton, N. B. (100); installation of C.T.C., including necessary track changes, West Junction to Ste. Rosalie Junction, Drummondville subdivision, Que. (50); construction of additional terminal facilities, Garneau, Que. (100); strengthening of steel superstructure on Victoria bridge (50); construction of new car shop facilities, Point St. Charles, Que. (25); construction of ash-handling facilities, Turcot, Que. (50); diversion of passenger main track around yard, including the rearrangement of other facilities, Mimico, Ont. (50); repairing and strengthening steel superstructure of International bridge, Cayuga subdivision, Ont. (50); reconstruction of three-track ferry slip on concrete foundation, Windsor, Ont. (50); construction of annex to erecting shop, including incidental track changes, Stratford, Ont. (50); installation of two generating units and the retirement of four boilers, Stratford, Ont. (100); construction of new branch line, Barraute, Que., to Kiask Falls (40); construction of new steam plant to serve Central station area, Montreal, Que. (50); construction of International aviation building, Montreal, Que. (50); construction of central heating plant, Winnipeg, Man. (100); alterations to the Granville Street office building, Vancouver, B. C. (100); construction of new east wing, including alterations and additions to the station, Edmonton, Alta. (100); revision of main track alinement, including necessary track changes in the yard, and the installation of a new track scale, Edmonton, Alta. (50); construction of an extension to the yard, Vancouver, B. C. (50); installation of automatic block signals, Spence's bridge to Hope, B. C. (50); installation of automatic block signals, Red Pass Junction to Jackman (50); construction of new ferry slip, Nanaimo, B. C. (50); construction of new enginehouse and other facilities, including the rearrangement of yard, Watrous, Sask. (50); rearrangement of tracks in Nicholas yard, Battle Creek, Mich. (50); construction of new station and rearrangement of track facilities at Plainfield avenue, Grand Rapids, Mich. (50); installation of facilities for servicing Diesel locomotives, Battle Creek, Mich. (50); reconstruction of car-ferry apron, and renewal of fender racks, Detroit, Mich. (50); reconstruction of pole line, Montreal, Que., to Vaudreuil (100); reconstruction of pole line, Riviere du Loup, Que., to St Anne (100); reconstruction of pole line, Pacific Junction to Rivers, Harte subdivision (100).

### Canadian Pacific

*First Track:* Ashport, Ont., to Adelard, 12.70 mi.

*New Road Under Construction:* Deux Rivieres, Ont., to Klock, 9.66 mi.

*Grade Crossing Eliminations:* Subways: Clifton road extension, Toronto, Ont., $250,000 (100); highway No. 44, near Wartime, Sask., cost divided 40 per cent to the railway grade-crossing fund, 3 per cent to the railway, and 57 per cent, plus cost of maintenance to the provincial government, $35,000 (100).

*Important Work Undertaken:* Installation of 43 mi. of absolute permissive block color-light signals, including necessary track work, Mattawamkeag subdivision, Maine, $275,000 (80); construction of a terminal yard, consisting of a receiving yard, a departure yard, classification yard with hump, car retarders, and other complete facilities, Montreal, Que., $8,000,000 (20); construction of local freight shed, Fort William, Ont., replacement of a 400-ton timber coaling plant with new coaling facilities, Fort William, Ont., construction of extension to postal station "A", including an additional story, Winnipeg, Man., rehabilitation of steel bridge, damaged by flood conditions, Suffield subdivision, Alta. Construction of a six-track storage yard, Marpole, B. C.; replacement of existing power plant with a modern unit, Vancouver, B. C.; revision of alinement to avoid tunnel, Cranbrook subdivision, Loop, B. C.; replace two timber Howe-truss bridges, with steel structures, replace two other bridges by a revision of alinement, 0.8 mi. long, involving a 500-ft. tunnel, Princeton, B. C.

*New Lines Under Survey:* Mattawa, Ont., to Timiskaming, Que., 38.00 mi. (Quebec Central). *New Road Under Construction:* Quebec subdivision (relocation) 2.20 mi.

*Grade Crossing Eliminations:* Subways: Construction of concrete subway Mile Post 66, Quebec subdivision, Thetford Mines, work done by the railway, with the cost distributed 40 per cent to the railway grade-crossing fund and the balance not yet allocated, $58,000 (75); construction of concrete subway, Mile Post 67.2, Quebec subdivision, Thetford Mines, work done by the railway, cost distributed 40 per cent to the railway grade crossing fund and the balance not yet allocated, $66,400 (75).

### Dominion Atlantic

*Important Work Undertaken:* Purchase of building and renovation for office use, Barrington Street, Halifax, N. S., $680,000 (60).

## MEXICO

### Ferrocarriles S. C. O. P.

*New Road Under Construction:* Coatzacoalcos, Ver. to Campeche, Camp., 460 mi.; Creel, Chih., to San Pedro, Sin., 160 mi.

*New Lines Under Survey:* El Salto, Dgo. to Mazatlán, Sin., 140 mi.; from Honey, Pue., to Tuxpan, Ver., 145 mi.

*Grade Crossing Eliminations:* Villahermosa-Teapa highway, $23,000 (10).

*Important Work Undertaken:* Construction of Mexcalapa bridge consisting of seven through-truss spans, $1,000,000 (90); construction of Teapa bridge for railway and highway, consisting of riveted deck-plate girders of the Gerber type, $170,000 (80); construction of Tacotalpa bridge consisting of three riveted deck-plate girder spans (Gerber type) and three approach spans, $200,000 (50); construction of Usumacinta bridge for railway and highway, consisting of a single through arch span and two reinforced concrete approaches, $900,000 (10).

### Mexico Pacific

*New road under construction:* 10.44 mi.

### Minatitlan al Carmen

*Important Work Undertaken:* Construction of a brick and concrete building, having steel roof trusses covered with corrugated asbestos sheets, a general waiting room and various ticket, express and freight offices, Minatitlan, Ver., $200,000 (Mexican pesos) (10).

### National of Mexico

*First Track:* San Luis Potosi, 4.00 mi.

*New Road Under Construction:* At seven points (relocations) 2 mi., Agua Buena to Apeo, 11 mi., Andresito to Km. V-347, 6 mi., Jesus Carranza to Km. Z-125.6, one mile.

*Grade Crossing Eliminations:* Subways: San Luis Potosi, $90,000 (100); two locations in Andresito, Ver., $3,000 (100).

*Important Work Undertaken:* Construction of new passenger station, including all services, Chihuahua, Mex., $224,923 (30); alter narrow-gage track to standard gage for 177 mi., Mexico City to Acambaro, Gto., $5,500,000 (80).

# *Slipping* DRIVERS
## *damage* Rails *as well as* Tires

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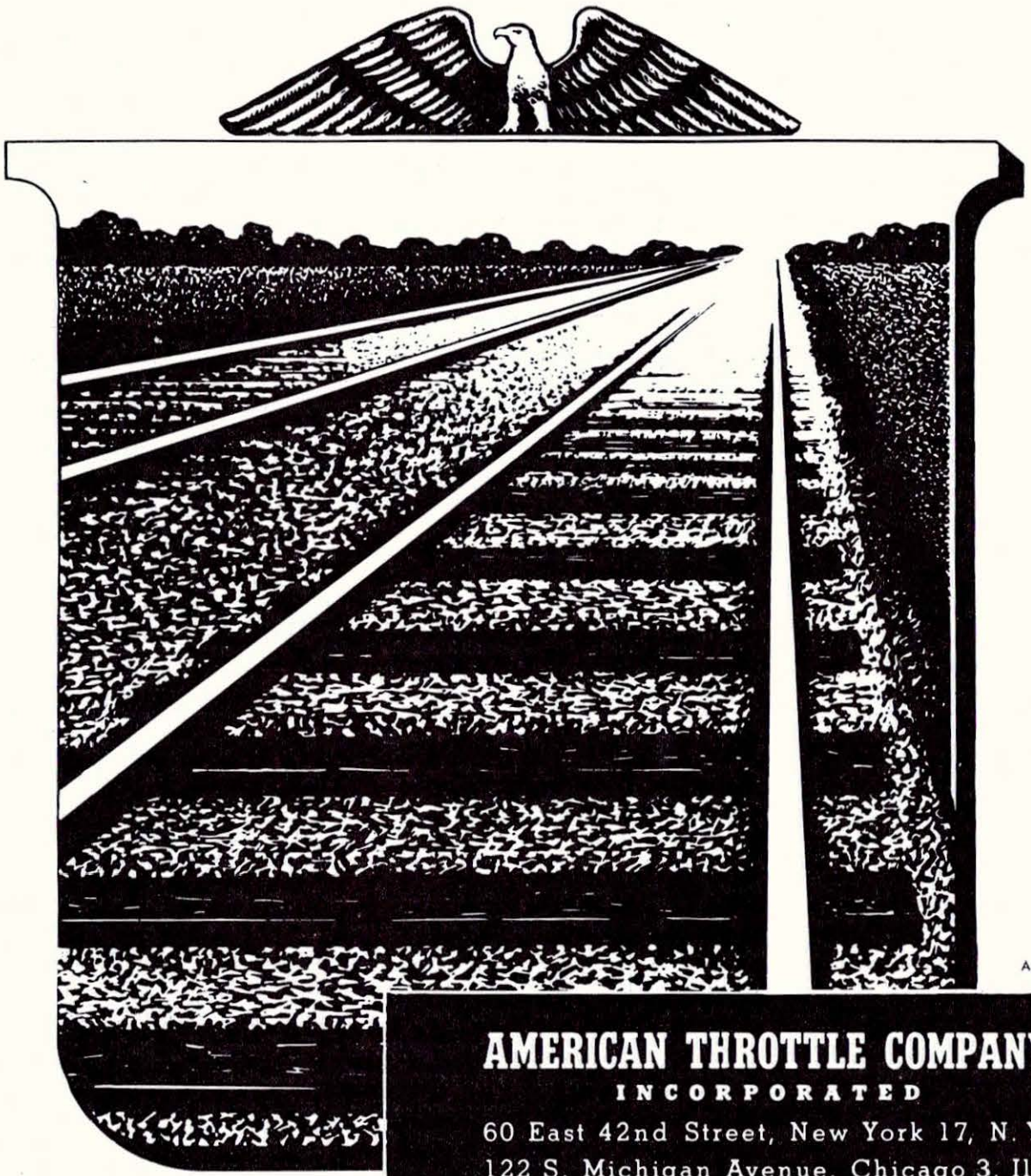

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# GENERAL NEWS

## I. C. C. Approves R. E. A.'s Single-Scale Rate Plan

### Adjustment will raise annual revenue by about $6.8 million

The Interstate Commerce Commission has authorized the Railway Express Agency to install its proposed single-scale rate plan, which is based on the present western scale and will thus increase express rates in the East and South. The commission's decision adopts the recommended findings of the proposed report by Examiner Leonard Way, who had estimated that the adjustment would raise R.E.A.'s annual revenues by about $6,847,000 (see *Railway Age* of December 4, 1948, page 57).

The decision came out of the second further hearing in Ex Parte No. 103, the proceeding in which R.E.A. has already received three temporary increases to provide interim relief while it worked out the single-scale rate plan. The latter had been called for by the commission in its prior reports in the case; and it was submitted by R.E.A. last September (see *Railway Age* of September 11, 1948, page 76).

The single-scale plan on the western basis will supplant the present two-scale plan which embodies the eastern scale and an eastern-southern scale. Examples of the percentage increases in first-class 100-lb. rates in the East and South, by mileage blocks, were given in the report as follows: 12.5 to 400 mi., to 6.04 to 2.53 per cent; 450 to 550 mi., no change; 600 to 900 mi., 1.14 to 13.07 per cent; 950 to 2,500 mi., 16.81 to 7.79 per cent. Other examples indicated that the percentage increases in the first-class 100-lb. from New York to 12 large cities will range from a 1.14 per cent rise in the New York-Cleveland, Ohio, rate to one of 16.2 per cent in the New York-Birmingham, Ala., rate. The New York-Chicago rate will be increased 13.07 per cent and the New York-St. Louis, Mo., rate 15.64 per cent.

The report also contains a comparison showing that the increased parcel post rates which became effective January 1 will be lower on 50-lb. packages than the new express charges for distances up to 3,900 mi. The parcel post rate for distances from 1,800 to 3,900 miles is shown as $5.71½, as compared with express charges ranging from $5.74 to $9.59.

Under the new scale, the Express Agency estimates that it will handle, in a "prospective year," 152,014,000 shipments, which 148,000,000 will be l.c.l. shipments. It puts the gross revenues of the "prospective year" at $457,597,000, and the expenses and taxes at $300,675,000. On that basis the amount available for express-privilege payments would be $156,922,000, of which $144,149,000 would go to class I railroads and the remainder to roads of other classes, air lines and "other carriers."

The commission's order authorizes publication of the new rates on the regular 30-days' notice. The decision, dated December 29, 1948, was made public the following day. It noted that Commissioner Johnson, who is director of the Office of Defense Transportation, participated; but that Commissioner Alldredge, who was "necessarily absent," did not.

### RIGHT FIGURES — WRONG MONTH

**Due to a typographical error, the two-page tables of Freight Operating Statistics of Large Steam Railways, published in the *Railway Age* of January 1, pages 60 and 61, were incorrectly identified as referring to the months of June, 1948, and June, 1947. The figures actually referred to the months of September in those two years.**

## Canada Sets Up Royal Commission on Transportation

Creation of a Royal Commission to study transportation problems within the jurisdiction of the Canadian Parliament has been announced at Ottawa, Ont. The commission will be headed by Hon. W. F. A. Turgeon, envoy to Eire, and will include Professors Henry F. Angus of the University of British Columbia and Harold A. Innis of the University of Toronto. J. L. Ilsley, wartime finance minister and later minister of justice, will act as counsel.

A wide field of transportation questions will be dealt with by the commission—so wide that its functions may overlap those of the Board of Transport Commissioners. As previously reported in *Railway Age*, the latter body will open hearings next week on the railroads' pending application for interim and permanent freight-rate increases of 15 and 20 per cent, respectively; and it has, likewise, been instructed by the government to inquire into certain matters now also being referred to the new commission.

In general, however, the commission's authority will follow closely along lines demanded by the seven provincial governments whose dissatisfaction with the present freight-rate set-up led to the commission's appointment. The single restriction is that its scope is not to extend to "performance of functions" within the exclusive jurisdiction of the transport board. Within that radius, the commission will be able to inquire generally into freight rates to meet geographical disabilities, as sought by the provinces, but will not be able to deal with individual rates. Its recommendations concerning the general rate structure would be in the nature of "guidance" to the transport board.

Among specific subjects listed for investigation by the commission are the economic and geographic disadvantages confronting certain sections of Canada; alleged freight-rate discriminations between areas; suggested changes in the Railway Act under which the transport board was created and operates, and the capital structure of the Canadian National. The commission has been especially asked to examine the advisability of getting that structure down to a basis comparable with those of American roads. Other questions referred to the commission, and which also have been before the transport board, are the advisability of getting some uniformity into the bookkeeping methods of the two principal Canadian roads; keeping revenues and other income from railway

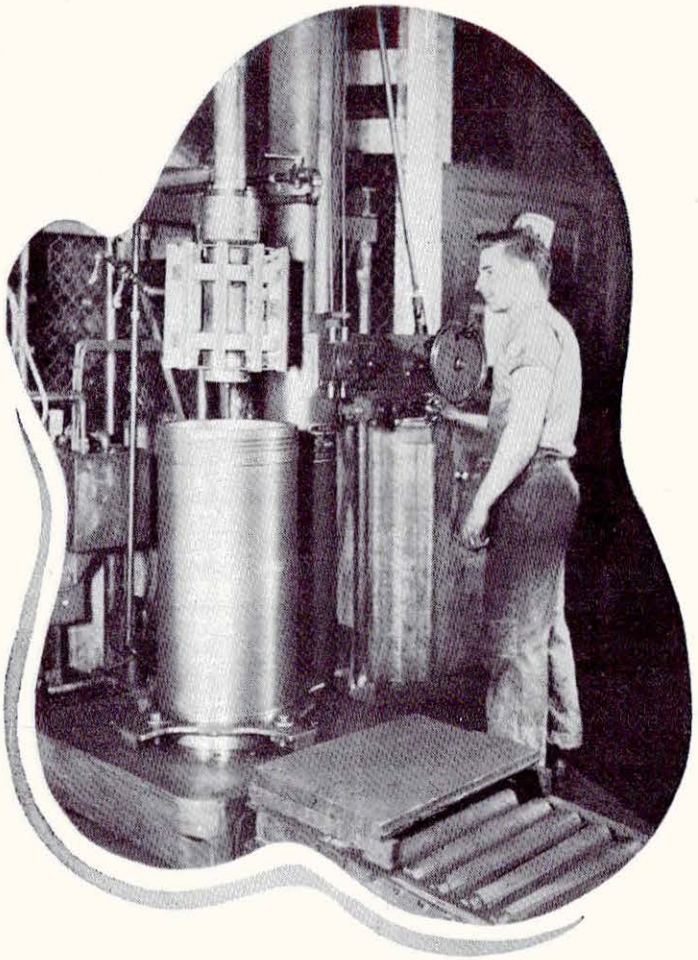
### LONG ISLAND TO USE MOVIES AS PUBLIC RELATIONS AID

**To provide its customers with vital facts about its operations and improvements being made in its service, the Long Island is inaugurating the use of motion pictures, both in direct showings at its western terminals and in spot showings over television stations.**

**The first of three one-minute movies, entitled "Just a Minute!" will be shown continuously to the public through three daylight projectors at Pennsylvania station, New York, and two at Flatbush Avenue terminal, Brooklyn. The film has also been televised since December 27 on evening programs of stations WCBS-TV, WNBT and WJZ-TV.**

**"Just a Minute!" dramatizes the railroad's problem of sharply rising costs which have outstripped revenue and made an immediate increase in commutation fares an urgent necessity. Two other films, now in production, will deal with payments by the Long Island for use of Pennsylvania station, and with its $18,509,000 improvement program, now more than half completed.**

# HSGI DIESEL LINERS



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properties separate from those derived from non-railway properties, and co-operative savings provided for in the Canadian National-Canadian Pacific Railway Act of 1933.

The government has not indicated when the commission's inquiry will open, but it is expected preparations will take about two months, and that the inquiry will extend through the balance of 1949. Other matters not so far clarified by the government are how the commission's inquiry will be related to the general inquiry into the freight-rate structure which the transport board was ordered last April to undertake; and whether the commission's work will supersede or merely duplicate that of the board.

## Railway Express Agency Answers Anti-trust Suit

The Railway Express Agency on December 30, 1948, filed its answer in the Wilmington (Del.) federal court in reply to the government's anti-trust action started in that court on September 17, as reported in the *Railway Age* of September 25, page 59. The R. E. A.'s answer contends that its operations are covered by the transportation laws and not by the Sherman Act; that provisions of its standard contract with the railroads attacked by the attorney general are reasonable and lawful even if the Sherman Act were applicable, and that administrative issues are involved which should first be passed upon by the Interstate Commerce Commission.

The answer develops the history of the unified operation of the express business, which has existed since the government required during World War I that all express over federal-controlled railroads be handled by a single company. Congress and the I.C.C., in 1920 approved a consolidation of the express business, and in 1929 the commission approved the essential features of the organization of R.E.A. as a joint agency of all the railroads. The attorney general, by attacking its contract with the railroads, is charged in the answer with trying to restore the situation which Congress and the commission decided to eliminate to have the economy and better service which only a nationwide organization can give.

Railway Express asserted also that it "retains no revenue for itself, makes no profit and pays no dividends," and that "the public is receiving better service at lower rates than would be possible if there were any breach in the unified, nationwide operations" which it conducts.

Agency attorneys also said the primary issues in the suit were not properly put before the court until after the I.C.C. had finally acted upon them. The issues are, first, the effect and implications of the decisions of the commission authorizing unified, nationwide operation of the express business; and, second, the application to the complex problems of express transportation of the transportation policy enacted by Congress in 1920 and 1940.

## 42.8 Million Cars Loaded Last Year; 3.7 Per Cent Below 1947

Loading of revenue freight on railroads of the United States totaled 42,833,902 cars in 1948, according to the Association of American Railroads. This was a reduction of 1,668,286 cars or 3.7 per cent compared with 1947.

"Measured by the number of tons hauled one mile," the A.A.R. statement said, "the volume of freight traffic handled in 1948 was the greatest for any peacetime year, except in 1947 which exceeded it by two per cent. Freight traffic in 1948 was 43 per cent above the pre-war peak in 1929.

"Railroad freight traffic in 1948 was handled with an all-time record efficiency. In that year, the average number of tons of freight moved per train exceeded all previous records. At the same time, the average speed of freight trains was somewhat higher than in any of the preceding six years. The average freight train thus turned out more net ton-miles of transportation service per hour than ever before. This increased efficiency with which freight was handled was accomplished by heavier loading of freight, an increase in the average capacity of freight cars, more powerful locomotives and the continued improvement that has taken place in signaling and operating methods."

The 1948 and 1949 loadings by commodities are compared in the accompanying table.

| | 1948 | 1947 | Per cent Inc. | Per cent Dec |
|---|---|---|---|---|
| Grain and grain products | 2,467,286 | 2,725,655 | | 9.5 |
| Livestock | 630,873 | 770,123 | | 18.1 |
| Coal | 8,729,745 | 9,088,131 | | 3.9 |
| Coke | 735,801 | 732,130 | .5 | |
| Forest products | 2,359,193 | 2,414,548 | | 2.3 |
| Ore | 2,780,635 | 2,651,024 | 4.9 | |
| Merchandise, L.C.L. | 5,457,824 | 6,071,293 | | 10.1 |
| Misc. | 19,672,545 | 20,049,284 | | 1.9 |
| Total | 42,833,902 | 44,502,188 | | 3.7 |

## N.I.T. League Wants Hearing On Eastern Traffic Agreement

The National Industrial Traffic League has filed with the Interstate Commerce Commission a petition for leave to intervene in the proceeding wherein eastern railroads are seeking approval of their proposed rate-procedures agreement. The agreement was filed under the Interstate Commerce Act's section 5a, added last June by the Bulwinkle-Reed Act; the application for its approval is docketed as Section 5a Application No. 3.

The earlier application filed by members of the Western Traffic Association has been assigned for hearing at Washington, D. C., on February 28 before the commission's Division 2. The N.I.T. League was among those asking for that hearing, its petition having suggested that the proceeding, which involves the first railroad application filed under the new section, be made a "test case."

The league's petition in the eastern case, like its presentation in the western case, indicated general support of the applications. Nevertheless, it asked that the eastern application also be assigned for hearing, because "in certain matters of detail, the league will urge that procedures proposed in the plan will be improved and results more satisfactory both to the carriers and to the shippers will be obtained if certain changes are adopted by the carriers or required by the commission." More specifically, the petition said the matters on which the league desires to submit suggestions relate to "methods of voting and matters of appeals."

The Department of Justice has indicated that it will oppose both agreements and the commission has given it until February 7 to file detailed specifications of its objections.

## H. & M. Seeks Fare Increase

The Hudson & Manhattan has filed with the Interstate Commerce Commission a petition for authority to increase from 10 to 15 cents interstate fares between all stations on its lines. The petition stated that the proposal is part of an integrated plan whereby the road will undertake to advance all its passenger rates, increasing from 5 to 10 cents its local intrastate fares in New Jersey and New York, and from 31 to 35 cents the joint rate it maintains with the Pennsylvania from Newark, N. J., to all H. & M. stations. "Related increases" will also be sought in joint commutation fares.

## Federal Barge Lines Rescind Embargoes

Embargoes and reductions in service put into effect last July by the government-owned Inland Waterways Corporation have been rescinded. The action was taken after a recent meeting of the corporation's advisory board in Washington, D. C.

Secretary of Commerce Sawyer explained that "full restoration of service" was made possible by an improvement in the corporation's financial condition, its "net revenues" for the first quarter of the 1949 fiscal year having been "approximately $500,000 ahead" of those for the first three months of the previous fiscal year ended June 30, 1948.

The now-rescinded "restrictions on service" were listed in the Commerce Department's announcement as follows: Missouri River service reduced from about four sailings per month to monthly sailings to Kansas City, Mo., and suspended above Kansas City; carload and l.c.l. freight suspended to, from and via upper Mississippi river ports above St. Louis, Mo., and serv-


*News Department continued on next left-hand page*

# A BIG OK ON THE KATY

IN April 1947, the Missouri-Kansas-Texas Railroad placed General Motors passenger locomotive No. 101 in service. Through June 1948, this 4,000 H.P. Diesel met assignments 100%.

The record of General Motors Diesels in freight service on the Katy is equally brilliant. As shown by the performance table below, seven General Motors Diesel freight locomotives in their first year of operation rolled up a total of 1,130,156 miles out of 1,144,376 miles assigned. Operating on fast daily schedules between Oklahoma, Texas and the North, they handled crack Katy freights an average of 13,697 miles per month, with a record of 98.76% availability based on assignment.

**PERFORMANCE OF GM DIESEL FREIGHT LOCOMOTIVES ON M-K-T**

| Loco. No. | Month Delivered | Total Miles Assigned | Total Miles Operated | Avg. Miles Operated Per Month | Per Cent of Assignment Filled |
|---|---|---|---|---|---|
| 201 | 6-47 | 164,012 | 161,538 | 12,996 | 98.49 |
| 202 | 6-47 | 172,715 | 170,453 | 13,746 | 98.69 |
| 203 | 7-47 | 160,689 | 158,716 | 13,742 | 98.77 |
| 204 | 7-47 | 163,776 | 162,335 | 13,934 | 99.12 |
| 205 | 7-47 | 161,408 | 159,468 | 13,771 | 98.80 |
| 206 | 7-47 | 162,578 | 161,130 | 14,036 | 99.11 |
| 207 | 7-47 | 159,198 | 156,516 | 13,705 | 98.32 |
| | **TOTAL** | 1,144,376 | 1,130,156 | 13,697 | 98.76 |

GENERAL MOTORS LOCOMOTIVES

## ELECTRO-MOTIVE DIVISION

GENERAL MOTORS • LA GRANGE, ILL. • *HOME OF THE DIESEL LOCOMOTIVE*

## HOW RAILROADS' ADVERTISING EXPENDITURES COMPARED WITH THEIR COMPETITORS'

| Carrier | Year | Number of carriers | Operating revenue | Advertising expenditure | Proportion of opr. revenue spent for advertising (per cent) | Per $100 of opr. rev. |
|---|---|---|---|---|---|---|
| Class I intercity trucks | 1945 | 687 | $ 389,946,337 | $ 1,063,441 | 0.27 | $0.27 |
| | 1946* | 698 | 439,025,901 | 1,214,513 | 0.28 | 0.28 |
| Class I intercity bus lines | 1945 | 231 | 377,933,053 | 3,288,207 | 0.87 | 0.87 |
| | 1946* | 254 | 380,627,013 | 4,156,128 | 1.09 | 1.09 |
| Air lines | 1945 | 17 | 214,606,665 | 6,752,997 | 3.15 | 3.15 |
| | 1946* | 17 | 311,893,041 | 9,479,562 | 3.04 | 3.04 |
| Class I railroads | 1945 | 135 | 8,898,608,727 | 16,709,060 | 0.19 | 0.19 |
| | 1946 | 133 | 7,627,650,517 | 19,624,511 | 0.26 | 0.26 |
| | 1947 | 131 | 8,684,918,252 | 22,453,792 | 0.26 | 0.26 |
| Association of American Railroads | 1945 | | 8,898,608,727 | 1,365,097 | 0.015 | 0.015 |
| | 1946 | | 7,627,650,517 | 1,498,610 | 0.02 | 0.02 |
| | 1947 | | 8,684,918,252 | 1,574,000 | 0.018 | 0.018 |

*1947 figures not yet available from government sources.

ice at St. Louis confined to barge-load traffic; service to, from and via Baton Rouge, La., suspended; service to, from and via Greenville, Miss., and Helena, Ark., suspended except for barge-load traffic and cotton.

The announcement also said that the advisory board had adopted a resolution recommending that municipalities along I.W.C. routes "be urged to provide handling facilities that would be adequate to allow economical operations." It added that "facilities in some places are not adequate for merchandise traffic."

### Canadian Railways Shackled by Rates

Railway operating and transportation costs today are far out of line with the price which Canadian railways are allowed to charge for their services, G. A. MacNamara, vice-president of traffic for the Canadian Pacific, told the Commercial Travellers Association of Canada at its recent annual dinner at the Royal York Hotel in Toronto, Ont.

This year, the speaker said, the Canadian Pacific, after deducting operating expenses and taxes, will have only a fraction more than six cents left from each dollar of gross earnings from rail operations to meet bond interest, other fixed charges, and pay a fair return to shareholders. Gross is expected to be approximately $350 million. This decrease in net revenue has come notwithstanding increased freight rates made effective last April 8, he added, comparing it wth the record low year of 1933, when, from a gross of only $114 million the company realized a net revenue of 17 cents on each dollar after taxes and operating expenses.

"Good service," Mr. MacNamara maintained, "is entitled to adequate remuneration and just over six cents out of every revenue dollar earned is far from adequate to meet bond interest, other fixed charges and a fair return to shareholders."

He pointed out that Canadian railways are selling their services at 1922 prices plus 15 per cent, which is what the 21 per cent freight rate increase works out to due to exceptions and maximum rates on certain commodities. This increase, designed to give the railways $1 million more this year, had been offset by the wage award in July which added $71 million to their annual expenditures, he continued. In addition, these figures did not take into consideration the steady spiral in equipment and material cost since that time.

Canadian railways move a ton of freight one mile for one cent, he said, a figure approached only by the United States, while Great Britain, Australia, the Argentine and Germany more than double this cost.

### Tigrett, Wiggins Nominated for South's 1949 "Man of the Year"

I. B. Tigrett, president of the Gulf, Mobile & Ohio, and A. L. M. Wiggins, chairman of the board of the Atlantic Coast Line, have been nominated by the magazine Dixie Business, Atlanta, Ga., for its 1949 selection of the South's 50 foremost business leaders. The one among the 50 selected who receives the highest number of votes, i. e., letters to the magazine in his behalf, will be named by the magazine as the South's 1949 "man of the year."

### Joins Commerce Secretary's Staff As Adviser on Federal Barge Lines

Thomas J. Maloney, who is retiring from the position of general traffic manager of the International Harvester Company, will join the staff of Secretary of Commerce Sawyer, serving in an advisory capacity in connection with the future operation of the government-owned Inland Waterways Corporation. The Commerce Department's announcement said that Mr. Maloney's title will be special representative of the secretary, and that he will assume his new duties about January 17, with headquarters at Washington, D. C.

Mr. Maloney is now a member of I.W.C.'s advisory board. "In his new capacity," the announcement also said, "he will review the present status and future prospects of the corporation and advise Secretary Sawyer concerning proposals and plans which will determine the future of the Federal Barge Line. He will also give particular consideration to rehabilitation programs proposed for the modernization of the floating and terminal equipment of the barge line."

### O.I.C. Calls January 12 Meeting of Steel Committee

The Department of Commerce's Office of Industry Cooperation has called a meeting of its Steel Products Advisory Committee for January 12 at Washington, D. C. This will be the committee's first meeting since November 19, 1948, when Director J. Monroe Johnson of the Office of Defense Transportation, so he has said, was not permitted to make a "full presentation" of his case for a freight car program larger than the present plan which calls for a monthly production of 10,000 cars.

Continuance of the 10,000-car plan was decided upon at the November 19 meeting, but Colonel Johnson has since persisted in his demands for steel allocations to produce at least 14,000 cars per month. He had hoped to have the steel committee called together for a December meeting at which he might make his full presentation; and he is now expected to seek the opportunity of doing so at the January 12 meeting (see *Railway Age* of December 4, 1948, page 60, and December 11, 1948, page 73).

### Truman Bestows Medal On C. & O. Trackman

For rescuing a 21-months-old child from the path of a train, Edward Ray Irish, a Chesapeake & Ohio trackman, has been awarded a medal of honor bestowed upon him by President Truman. The award, recommended by the Committee on Award of Medals of Honor and approved by the Interstate Commerce Commission, was made under the act of February 23, 1905, which provides for bronze medals of honor in recognition of outstanding feats of bravery connected with saving of life upon railroads.

The I.C.C.'s announcement of the award said it was based upon the rescue of the child from a C.&O. track upon which a passenger train was approaching near Blackmar, Mich., on October 13, 1947. Mr. Irish, who was working on the track in the vicinity, saw the train and noticed the child trying to climb over one of the rails into the middle of the track.

"Mr. Irish," the commission's notice continued, "dropped his tools and ran to the rescue of the child, grasped the child, tossed him clear of the track and fell backward into a ditch, just escaping being struck by the locomotive.



*News Department continued on next left-hand page*

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No matter where a GATX car rolls, it's never far from one of the many General American Maintenance Shops. These strategically located shops keep the cars used by General American's customers rolling.

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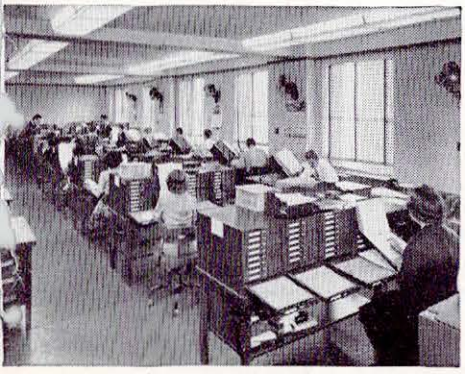
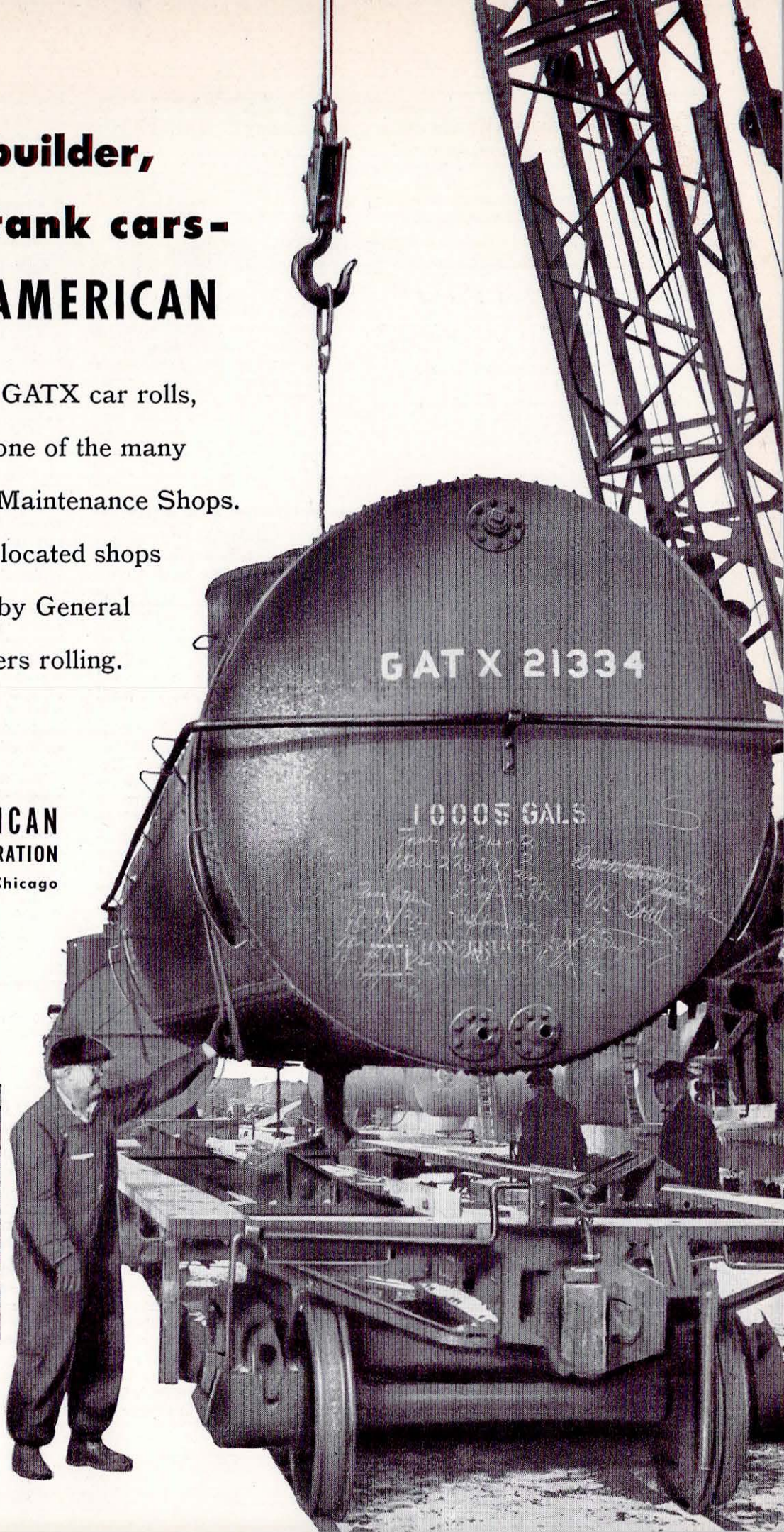


In cooperation with the railroads, experienced record-keeping and traffic control distribute more than 40,000 GATX cars to meet shippers' special and seasonal requirements.



## I. C. COMMISSIONER BARNARD DIES

**George M. Barnard, who had been a member of the Interstate Commerce Commission since December, 1944, and its chairman during 1946, died suddenly of a heart ailment at his Washington, D. C., home on January 2.**

The child was about 200 ft from Mr. Irish when he first saw it and the speed of the train was about 60 m.p.h. In accomplishing this rescue, Mr. Irish exhibited extreme daring and greatly endangered his own life."

Mr. Irish's medal was the sixtieth award since enactment of the Medals of Honor Act in 1905.

## Freight Car Loadings

Car loading figures for the week ended January 1 were not available when this issue went to press.

Loadings of revenue freight for the week ended December 25, 1948, totaled 609,239 cars, and the summary for that week as compiled by the Car Service Division, Association of American Railroads, follows:

Revenue Freight Car Loadings
For the week ended Saturday, December 25

| District | 1948 | 1947 | 1946 |
|---|---|---|---|
| Eastern | 116,305 | 113,131 | 120,660 |
| Allegheny | 128,302 | 131,115 | 137,715 |
| Pocahontas | 46,418 | 35,160 | 41,795 |
| Southern | 103,031 | 95,828 | 96,872 |
| Northwestern | 64,592 | 67,455 | 70,860 |
| Central Western | 96,403 | 104,485 | 107,640 |
| Southwestern | 54,188 | 52,180 | 52,425 |
| Total Western Districts | 215,183 | 224,120 | 230,925 |
| Total All Roads | 609,239 | 599,354 | 627,967 |
| Commodities: | | | |
| Grain and grain products | 37,695 | 35,611 | 44,553 |
| Livestock | 7,447 | 7,129 | 11,153 |
| Coal | 132,968 | 124,630 | 135,969 |
| Coke | 13,601 | 14,338 | 13,833 |
| Forest products | 31,922 | 28,950 | 27,605 |
| Ore | 12,884 | 11,859 | 10,194 |
| Merchandise l.c.l. | 75,578 | 86,303 | 97,492 |
| Miscellaneous | 297,144 | 290,534 | 287,168 |
| December 25 | 609,239 | 599,354 | 627,967 |
| December 18 | 754,545 | 832,130 | 836,185 |
| December 11 | 783,276 | 854,159 | 828,751 |
| December 4 | 804,183 | 878,588 | 729,084 |
| November 27 | 723,090 | 792,331 | 660,911 |
| Cumulative total 51 weeks | 42,833,902 | 44,502,188 | 41,341,278 |

*In Canada.*—Car loadings for the weeks ended December 18, 1948, and December 25, totaled 73,383 cars and 59,092 cars, respectively, compared with 75,491 cars and 52,803 cars for the corresponding weeks of 1947, and with 76,119 cars for the week ended December 11, 1948.

| | Revenue Cars Loaded | Total Cars Rec'd. from Connections |
|---|---|---|
| Totals for Canada: | | |
| December 18, 1948 | 73,383 | 33,757 |
| December 20, 1947 | 75,491 | 37,680 |
| December 25, 1948 | 59,092 | 29,544 |
| December 27, 1947 | 52,803 | 33,081 |
| Cumulative totals for Canada: | | |
| December 25, 1948 | 4,069,952 | 1,894,591 |
| December 27, 1947 | 3,944,788 | 1,918,983 |

The week ended December 25 was the 52nd week in 1948, the first week having ended January 3. Cumulative total loadings of 4,069,952 cars were the largest in the history of Canadian railroads, compared with 3,944,788 cars in 1947, and a pre-war record of 3,695,415 cars in 1928.

## Transportation Association Elects New Director

Victor H. Jenkins, of the Philadelphia, Pa., Chamber of Commerce, has been elected a member of the board of directors of the Transportation Association of America. Mr. Jenkins will also serve as chairman of the regional advisory forum for the association's central Atlantic area, which includes the state of Delaware, New Jersey south of Princeton, and Pennsylvania east of Altoona.

## Eleven Months Net $652 Million

Class I railroads in the first 11 months of 1948 had an estimated net income, after interest and rentals, of $652 million, as compared with $418 million in the corresponding period of 1947, according to the Bureau of Railway Economics of the Association of American Railroads. The 11-month net railway operating income, before interest and rentals, was $937,690,381, as compared with $703,911,821.

Estimated results for November showed a net income of $63 million as compared with $44 million in November, 1947, while the net railway operating income for the 1948 month was $84,065,711 as compared with $65,954,487 for November, 1947. In the 12 months ended with November, the rate of return averaged 4.45 per cent, as compared with 3.58 per cent for the 12 months ended with November, 1947.

# SUPPLY TRADE

## Ryerson & Son to Expand Plant

Ground was broken recently in preparation for the construction of a $1,450,000 addition to the Chicago plant of Joseph T. Ryerson & Son, Inc., as part of the firm's $3,750,000 expansion and modernization program. The new building will provide some 118,000 sq. ft. of modern plant and office space and will increase the plant's capacity to between 75,000 and 100,000 tons of steel. The addition is scheduled for completion in November, 1949.

**Roland Whitehurst,** vice-president of the **Electric Storage Battery Company,** has announced the consolidation of the railway and motive power sales activities in a new division to be known as the railway and motive power sales division. **William Van C. Brandt,** formerly manager of Exide's motive power battery sales, has been appointed manager of the new division.

The **Dearborn Chemical Company,** Chicago, has announced the appointment of **E. Stewart Carlson,** formerly of the Chicago Tribune, as a member of its advertising staff.

**Ralph H. Schafer,** formerly associated with the Independent Pneumatic Tool Company, electric tool division, has been appointed sales engineer for the **E. H. Weigman Railway Supply Company,** 310 South Michigan avenue, Chicago.

**T. J. Maloney,** general traffic manager of the **International Harvester Company,** Chicago, and former president of the Chicago, West Pullman & Southern and the Illinois Northern, has retired after 47 years of railroad and traffic work.

**H. L. Lansing,** chief engineer of the **Railway Joint Company,** with headquarters in New York, has been elected vice-president in charge of sales and engineering.

**Nicholas M. Trapnell,** superintendent of motive power on the Chesapeake & Ohio at Richmond, Va., resigned on January 1 to form a partnership with **Richard P. Hankins,** under the firm name of **Hankins & Trapnell,** consulting engineers. Mr. Trapnell will continue to work in the field of railway mechanical engineering.

The **Great Lakes Steel Corporation** has appointed **Roy H. Weber** to handle sales of the company's nailable steel flooring in the far west, with offices at 68 Post street, San Francisco, Cal.

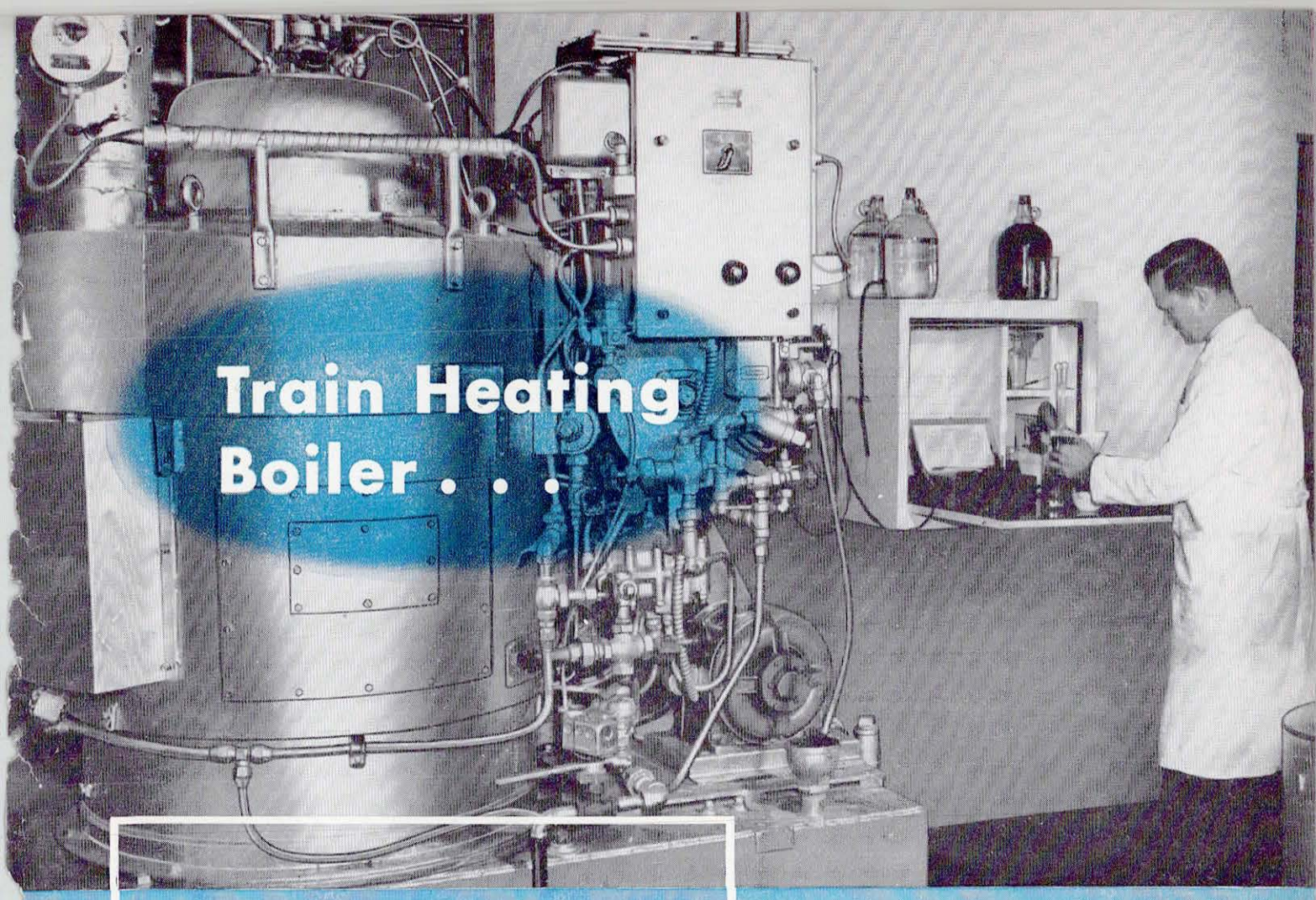
**R. E. Whinrey,** superintendent of the Dodge plant of the **Link-Belt Company** at Indianapolis, Ind., has been appointed to the newly created position of assistant general manager at that plant. He is succeeded by **L. C. Heinlein,** assistant superintendent.

**Charles G. Gruendling,** superintendent of the New Kensington (Pa.) plant of the **Standard Railway Equipment Manufacturing Company,** has been appointed works manager of that plant, succeeding **Frank W. Wolff,** who has retired because of illness.

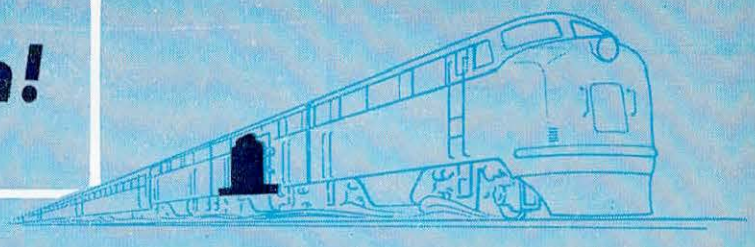
**Cutler-Hammer, Inc.,** Milwaukee, Wis., have announced the removal of their Indianapolis, Ind., sales office to 644 E. Maple road, Indianapolis 5. **F. W. Gilchrist** manages the office as a branch of the company's Chicago district office.

**F. R. Gibb,** president of the **Water Leak Detector Company** of Columbus, Ohio, has announced the appointment of the **Leak Detector Company,** 330 Bulkley Building, Cleveland 15, Ohio, as sole distributors, foreign and domestic, of "Universal" leak detectors and pipe locaters. **D. L. Blaik** is president and general manager

(*Continued on page 265*)




# . . . without a Train!



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Precisely-controlled and highly accelerated experiments are possible with this "captive" boiler, operating under conditions closely similar to those in actual train service. The object: continuously better water treatment chemicals and control procedures to improve operation and reduce maintenance costs.

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## For safer, smoother riding on the Milwaukee Road's popular Hiawatha Fleet

Here is a heavy, durable adjustable rail brace that provides maximum support to stock rails and guard rails in high speed and heavy traffic turnouts.

Note the tight fit between under side of rail head and base of rail — large cover plate and specially designed cap nuts that protect bolt threads from corrosion due to brine drippings. Simple time saving design reduces labor cost in installation and subsequent adjustment. No special tools necessary.

Investigate RACOR'S line of Rail Braces. They will assure greater maintenance economies and safer, smoother movement of your traffic.

***America's most complete line of track specialties***

AUTOMATIC SWITCH STANDS

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MANGANESE STEEL GUARD RAILS

RACOR

AMERICAN Brake Shoe COMPANY

**RAMAPO AJAX DIVISION**
109 North Wabash Avenue, Chicago 2, Ill.

(*Continued from page 262*)

of the newly formed corporation; **A. B. MacTaggart,** vice-president, and **Joseph W. Kennedy,** secretary and general counsel.

**A. H. Lundius** has been appointed plant manager of the Hyatt Clark Township plant of the Hyatt bearings division of **General Motors Corporation,** Harrison, N. J. Mr. Lundius, who was formerly assistant plant manager, succeeds **J. C. Henny,** retired.

**A. J. Fischer** has been appointed manager of the Dayton, Ohio, branch of the **Graybar Electric Company.** Mr. Fischer joined the company as a salesman at Cincinnati, Ohio, 21 years ago, and in 1945 was promoted to manager of the supply and signaling departments.

**Wylie Brown,** president of the **Phelps Dodge Copper Products Corporation,** has been elected chairman of the board of directors and will continue as chief executive office of the corporation. **Whipple Jacobs,** formerly president of the Belden Manufacturing Company of Chicago, has joined Phelps Dodge as president.

**H. L. Francis** has been appointed eastern traffic and transportation manager for the **Koppers Company.** Mr. Francis, whose headquarters are at Kearny, N. J., will continue his present duties with the gas and coke division. In addition, he will be the company's traffic and transportation representative in the New York-New Jersey area.

# CAR SERVICE

Writing as the Interstate Commerce Commission member in charge of its Bureau of Service, Colonel J. Monroe Johnson, who is also director of the Office of Defense Transportation, has advised Chairman A. H. Gass of the Car Service Division, Association of American Railroads, that provisions of various I.C.C. service orders should be incorporated in railroad tariffs "without delay"—if the carriers are interested in keeping those provisions in effect. Colonel Johnson's letter, dated December 21, 1948, noted that the commission's Division 3 had recently set back the expiration dates of Service Orders 68, 87, 104, 129, 775, 817, 822, and 828 (see *Railway Age* of December 25, 1948, page 55, and December 18, 1948, page 72).

"Some of these orders," Colonel Johnson continued, "have been extended several times and certain orders have been in effect for many years. The emergency provisions of the Interstate Commerce Act do not authorize the commission to maintain indefinitely service orders thereunder." Then came the Colonel's suggestion that provisions of any of the orders which the carriers desire to retain should be incorporated into the tariffs. He also recalled a meeting with carrier representatives at which he "made clear" his position that "in the absence of an emergency then existing no service orders will be extended beyond their present expiration date."

The Car Service Division, A.A.R., on December 22, 1948, cancelled the embargo it had placed the previous day against all freight intended for export or coastal shipment through the port of Philadelphia, Pa. As noted in the *Railway Age* of December 2, 1948, page 55, the embargo was placed because of a strike of Philadelphia longshoremen. Prompt ending of the walkout brought the cancellation.

# EQUIPMENT AND SUPPLIES

## IRON & STEEL

The **Baltimore & Ohio** has ordered 69,050 tons of rail for 1949 delivery. This is somewhat more than one-half of the railroad's estimated requirements (120,000 tons) of new rail for the year. The rail ordered is of both 115-lb. and 140-lb. sections; 1500 tons is to be assigned to the B. & O. Chicago Terminal and the remainder will be used at various points on the B. & O. main lines.

### 9,967 Freight-Train Cars Delivered in December

Freight-train cars for domestic use delivered in December totaled 9,967 including 2,603 built in railroad shops, compared with November production of 9,286 cars, which included 2,307 built in railroad shops, the American Railway Car Institute has announced. Freight-train cars ordered last month for domestic use amounted to 8,368, including 3,400 ordered from railroad shops, compared with November orders for 4,852 cars, which included 1,575 ordered from railroad shops. On order and undelivered on January 1 for domestic use were 103,896 freight-train cars, including 39,088 ordered from railroad shops.

# CONSTRUCTION

**St. Louis-San Francisco.**—This road has awarded a contract amounting to approximately $250,000 for construction of a Diesel locomotive shop at its new yard at Springfield, Mo. The concrete pits and foundations have already been constructed and are not included in the contract, which was given to the Brice Building Company, Birmingham, Ala. Joseph N. Newton, Springfield, has received a contract for the erection of a steel building at Altus, Okla., to be used as a potato shed. The amount involved is approximately $35,000.

# ORGANIZATIONS

The **Central Railway Club of Buffalo** will hold its sixtieth annual dinner on January 13, at 7:00 p.m., in the Hotel Statler, Buffalo, N. Y.

The next regular meeting of the **Car Foremen's Association of Omaha** will be held on January 13, at 6:30 p.m.

The **Northwest Locomotive Association** will hold its next meeting on January 17, at 8:00 p.m., at the Midway Club, 1931 University avenue, St. Paul, Minn. Russell Lucas, of the National Aluminate Corporation, will address the meeting on "Recent Developments in Smoke and Soot Prevention In Coal and Oil Fired Boilers."

"Performance With Safety" will be the subject of the address to be given by S. S. Sandford, superintendent of safety, Central of New Jersey, at the January 14 meeting of the **Eastern Car Foremen's Association,** to be held at 29 W. 39th street, New York. A motion picture on "Safety" will also be shown.

The 45th annual meeting of the **Canadian Railway Club** will be held on January 17, at 8:00 p.m., at the Mount Royal Hotel, Montreal, Que. The meeting will feature a presentation to the past chairman of the entertainment committee.

C. R. Zarfoss, vice-president, traffic, of the Western Maryland, will be the principal speaker at the 33rd annual dinner of the **Philadelphia Passenger Association,** to be held at the Penn Sheraton Hotel in Philadelphia, Pa., on January 10. Leo J. McKernan, of the Union Pacific, president of the association, will preside, and Ralph Dunn of the Pennsylvania will act as toastmaster.

The **New England Railroad Club** will hold its next meeting on January 11, at 6:30 p.m., at the Hotel Vendome, Boston, Mass. Dr. Leonard C. Mead of Tufts Engineering School will speak on "Men and Jobs."

The **Great Lakes Regional Advisory Board** will hold its next regular meeting at Hotel Statler, Detroit, Mich., on March 15 and 16, 1949, instead of on the previously announced dates of March 22 and 23.

(*Continued on page 266*)

# FINANCIAL

**Chicago, Milwaukee, St. Paul & Pacific.**—*Acquisition.*—Division 4 of the Interstate Commerce Commission has authorized this road to purchase the railroad property of the Chicago, Terre Haute & Southeastern, which owns approximately 317 miles of line operated by the Milwaukee under lease since 1921. The latter owns 97.18 per cent of the lessor's outstanding capital stock, and the purchase will be effected under a clause of the lease which gives the Milwaukee an option to purchase, at $10 per share, the 1,175.13 shares in the hands of the public. The purchase plan further contemplates assumption of liability by the Milwaukee for all the Terre Haute's outstanding obligations; authority for such guaranty was also granted by the commission. The obligations total about $23,543,800, including $9,571,000 first and refunding mortgage bonds, of which $1,515,000 are owned by the Milwaukee; $6,335,800 income bonds; $7,287,000 Southern Indiana first-mortgage bonds; and $350,000 Bedford Belt first-mortgage bonds. All the bonds mature January 1, 1994, and bear interest at a fixed rate of 2¾ per cent, and contingent interest of 1½ per cent.

**Chicago, Rock Island & Pacific.**—*Reorganization.*—Division 4 of the Interstate Commerce Commission has fixed maximum limits of final allowances for services and expenses incurred, in connection with this road's reorganization proceeding, by parties in interest and their counsel during the period, generally, from February 1, 1941, to the termination of the proceeding on January 1, 1948. The commission allowed a total of $855,542.60, a reduction of $480,214.85 from the $1,335,757.45 sought by claimants. Largest cut was applied to the claim of Harry Kirshbaum and Michael Gesas, counsel for a group of the debtor's convertible bonds, who were allowed only $33,913.34 on a claim of $238,767.76. The commission allowed nothing to Louis Cohen, who filed a claim of $2,000 as associate counsel for the same bondholders' group. Amounts claimed by the debtor's president and counsel were cut by $73,750, from $130,683 to $56,933; President E. N. Brown was allowed $16,337.08 on a claim of $27,087.08, Gerdes & Montgomery (counsel) was allowed $30,426.64 on a claim of $80,426.64 and Tenney, Sherman, Rogers & Guthrie (associate counsel) was allowed $10,169.29 on a claim of $23,169.29.

The largest allowance went to Root, Ballantine, Harlan, Bushby & Palmer, which got $100,767.56, on a claim of $122,683.96, as counsel for the so-called Institutional Group comprised of insurance companies and savings banks. Alexander & Green was allowed $100,101.55, on a claim of $121,601.55, as counsel for the general mortgage bondholders' protective committee. Sidley, Austin, Burgess & Harper, counsel for the reorganization managers, was allowed $92,444.05, the amount of its claim. Other allowances included: $39,950.13, on a claim of $40,594.14, to the general mortgage bondholders' protective committee; $39,000, on a claim of $60,000, to Cahill, Gordon, Zachry & Reindel, counsel for the protective committee for Choctaw, Oklahoma & Gulf and Choctaw & Memphis bondholders; $35,106.12, on a claim of $42,606.12, to Milbank, Tweed, Hope & Hadley, counsel for the trustee (Chase National Bank) of the debtor's convertible bonds; $29,245.85, on a claim of $59,979.45, to Beekman & Bogue, counsel for the protective committee for Rock Island, Arkansas & Louisiana bondholders; $26,500, the amount claimed, to Wilkie, Owen, Farr, Gallagher & Walton, counsel for the protective committee for Burlington, Cedar Rapids & Northern bondholders.

The commission allowed nothing to the State of Texas which claimed $2,046.10 for expenses in connection with its objection to the entry of a decree permitting incorporation of the reorganized debtor under the laws of Delaware and dissolution of the Chicago, Rock Island & Gulf, a Texas corporation. "We are unable to conclude," the commission said, "that the activities of this petitioner were of any benefit to the estate of the debtor or contributed in any way to the reorganization."

**New York, Chicago & St. Louis.**—*To Study Recapitalization.*—A committee of directors has been appointed to explore the possibilities of a recapitalization of this road. The directors appointed to the committee are: R. T. Zickl, H. B. Baker, H. R. Baxter, W. R. Daley, J. W. Davin and F. M. McHale.

**Reading.**—*Merger of Chestnut Hill.*—Division 4 of the Interstate Commerce Commission has approved a merger into this company of the properties of the Chestnut Hill, which owns 3.90 miles of Reading-system line in Philadelphia, Pa. The Reading has operated the line under lease since 1870, and it now owns all outstanding C.H. stock—3,913 shares of $50 par value.

**Rahway Valley.**—*Lease.*—Division 4 of the Interstate Commerce Commission has approved a 15-year extension, from January 1, 1949, to January 1, 1964, of the lease under which the Rahway Valley Company operates the properties of the Rahway Valley Railroad Company.

**Seaboard Air Line.**—*Securities.*—Division 4 of the Interstate Commerce Commission has extended for another year—until January 1, 1950,—the period within which this road may sell securities pursuant to the plan of reorganization whereby it emerged from receivership. The securities would be sold to provide cash for settlements with holders of the old Seaboard securities who do not deposit their holdings for exchange under the reorganization plan. The present extension, like previous ones, came in response to a Seaboard petition which noted that the depositing of old-company securities held in Holland and other foreign countries is still being delayed.

**Wisconsin Central.**—*Reorganization.*—Division 4 of the Interstate Commerce Commission has set back, from January 11 until February 1, the further hearing in this road's reorganization proceeding—Finance Docket No. 14720. The hearing will be held before Examiner H. H. Kirby at the United States Court House, Minneapolis, Minn. (See *Railway Age* of November 27, 1948, page 51).

# RAILWAY OFFICERS

## EXECUTIVE

**George Dunglinson, Jr.**, vice-president, traffic, of the Norfolk & Western, has been appointed executive vice-president, a new position, with headquarters as before at Roanoke, Va. **F. S. Baird**, assistant vice-president, traffic, has been promoted to vice-president, traffic, with headquarters as before at Roanoke, succeeding Mr. Dunglinson. **N. R. Lehmann**, assistant freight traffic manager, has been appointed assistant vice-president, traffic, succeeding Mr. Baird.

Mr. Dunglinson was born in England and came to America at the age of

George Dunglinson, Jr.

seven, receiving his education in private and public schools in Alabama. He was graduated from Alabama Polytechnic Institute and became a mining engineer in 1904 in the southern West Virginia coal fields. Four years later he joined the Norfolk & Western as a member of the car allotment commission, and was advanced to chairman of the commission in 1912. In 1917 he was promoted to assistant to the general man-

ager and in 1920 to manager of the N. & W.'s fuel department at Bluefield, W. Va. He was appointed assistant vice-president, traffic, at Roanoke in 1936, and advanced to vice-president on September 27, 1938.

F. S. Baird

Mr. Baird was born at Carbon Hill, Ohio, and educated in the public schools and business college at Athens, Ohio. He entered the service of the N. & W. 38 years ago as a stenographer in the assistant general freight agent's office at Columbus, Ohio. After several promotions at Columbus, he became coal freight agent at Roanoke in 1925, advancing successively to assistant general freight agent, assistant freight traffic manager and general coal freight agent. He was appointed assistant vice-

N. R. Lehmann

president, traffic, on November 1, 1940.

Mr. Lehmann was born at Glen Wilton, Va., and attended the public schools of Clifton Forge, Va., entering the service of the N. & W. as a clerk in the car record office at Roanoke in 1912. He became chief clerk to the general coal freight agent in 1927, and following other promotions became assistant general freight agent in 1937. Three years later he was advanced to general coal freight agent and in July, 1947, was appointed assistant freight traffic manager.

(*Continued on page 270*)


# THE SAME PRINCIPLE

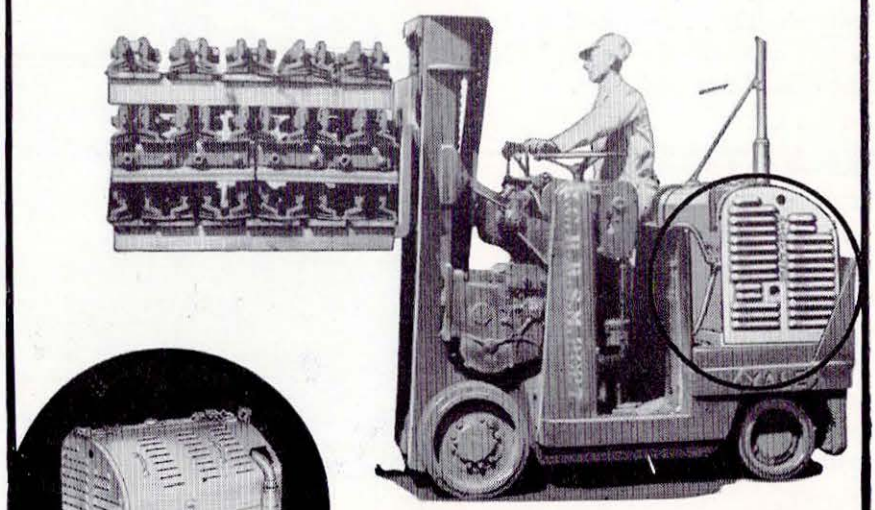
THAT SPEEDS THE FAMOUS ILLINOIS CENTRAL DIESEL-ELECTRIC *"City of New Orleans"*

# READY-POWER

GAS-ELECTRIC POWER UNITS

FOR CONTINUOUS ELECTRIC TRUCK OPERATION

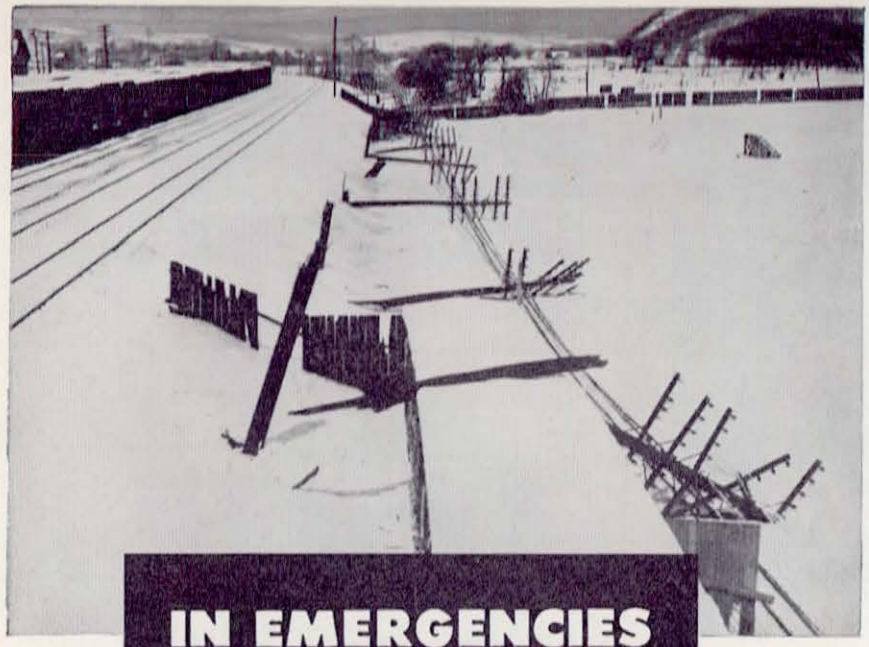
A combustion engine coupled to a direct current generator provides the constant power, flexibility and economy for which modern Diesel-electric streamliners are noted. This same principle of power is applied to electric trucks by equipping them with Ready-Power Units. Dependable electric power, generated on the truck chassis, permits operation at constant speeds for unlimited periods. All makes of electric trucks can be converted to Ready-Power. Specify Ready-Power for new trucks.



*I.C.R.R. Yale electric truck equipped with Ready-Power. Ready-Power Units are used extensively in Illinois Central warehouses and repair shops.*

THE READY-POWER CO.

3818 Grand River Ave., Detroit 8, Michigan




When storm, flood, or fire downs your communication lines, Graybar knows you must have replacement items *fast*. Graybar has outstanding facilities for delivering them wherever and whenever you need them.

Our nation-wide network of nearly 100 supply stations (warehouses and offices staffed with experienced personnel) provides broad accessibility to stocks of supplies for railway dispatching and telephone service. Our long-established relationships with select manufacturers assure their extraordinary cooperation in filling extraordinary needs. Our experience in past emergencies gives us the know-how for immediate action and efficient follow-through.

Graybar is ready, too, with prompt service on many of your other electrical needs — lighting, wiring, tools — for indoor or outdoor installations. *Graybar Electric Company, Inc. Executive offices: Graybar Building, New York 17, N. Y.* 4816-1

OFFICES AND WAREHOUSES IN NEARLY 100 PRINCIPAL CITIES

(*Continued from page 267*)

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ager and in 1920 to manager of the N. & W.'s fuel department at Bluefield, W. Va. He was appointed assistant vice-president, traffic, at Roanoke in 1936, and advanced to vice-president on September 27, 1938.

F. S. Baird

Mr. Baird was born at Carbon Hill, Ohio, and educated in the public schools and business college at Athens, Ohio. He entered the service of the N. & W. 38 years ago as a stenographer in the assistant general freight agent's office at Columbus, Ohio. After several promotions at Columbus, he became coal freight agent at Roanoke in 1925, advancing successively to assistant general freight agent, assistant freight traffic manager and general coal freight agent. He was appointed assistant vice-

N. R. Lehmann

president, traffic, on November 1, 1940.

Mr. Lehmann was born at Glen Wilton, Va., and attended the public schools of Clifton Forge, Va., entering the service of the N. & W. as a clerk in the car record office at Roanoke in 1912. He became chief clerk to the general coal freight agent in 1927, and following other promotions became assistant general freight agent in 1937. Three years later he was advanced to general coal freight agent and in July, 1947, was appointed assistant freight traffic manager.

(*Continued on page 270*)


# THE SAME PRINCIPLE

THAT SPEEDS THE FAMOUS ILLINOIS CENTRAL DIESEL-ELECTRIC

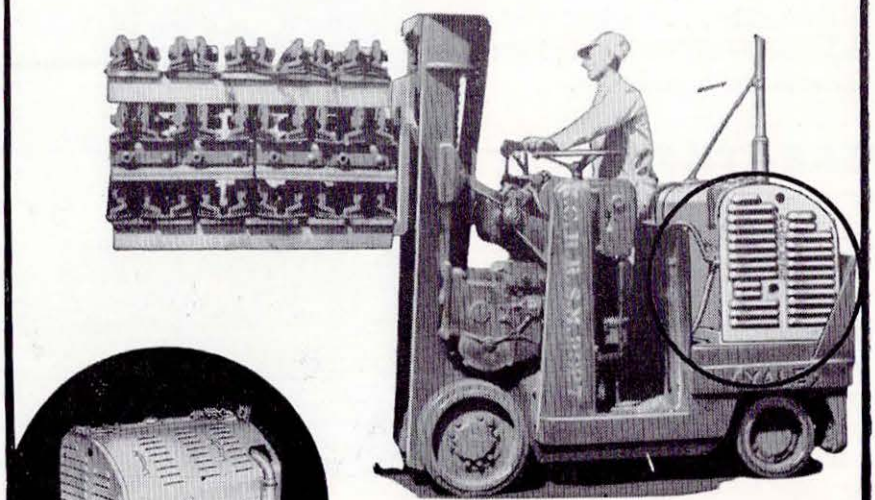
*"City of New Orleans"*

# READY-POWER

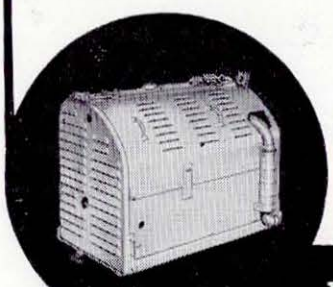
GAS-ELECTRIC POWER UNITS

FOR CONTINUOUS ELECTRIC TRUCK OPERATION

A combustion engine coupled to a direct current generator provides the constant power, flexibility and economy for which modern Diesel-electric streamliners are noted. This same principle of power is applied to electric trucks by equipping them with Ready-Power Units. Dependable electric power, generated on the truck chassis, permits operation at constant speeds for unlimited periods. All makes of electric trucks can be converted to Ready-Power. Specify Ready-Power for new trucks.



*I.C.R.R. Yale electric truck equipped with Ready-Power. Ready-Power Units are used extensively in Illinois Central warehouses and repair shops.*



THE READY-POWER CO.

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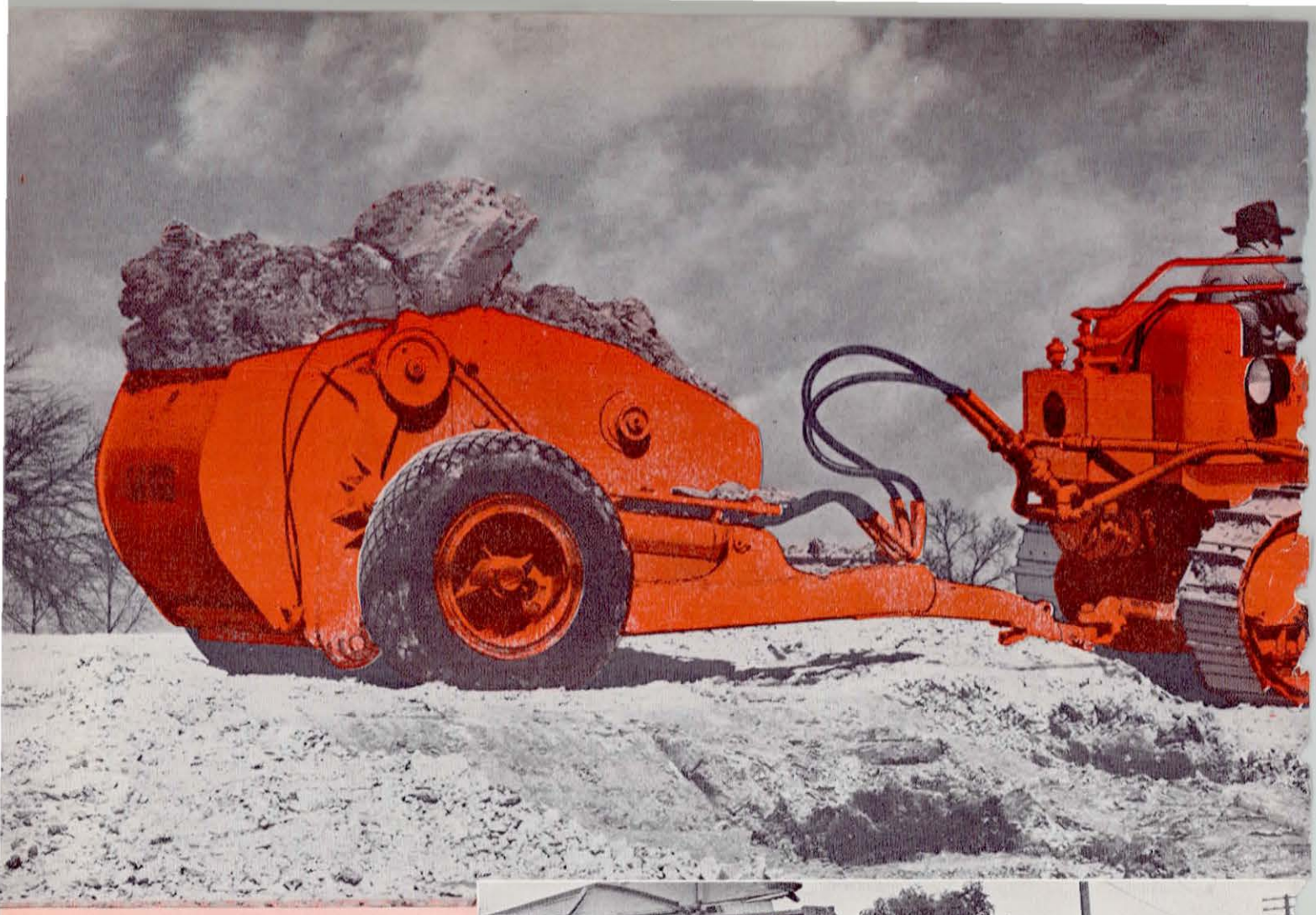
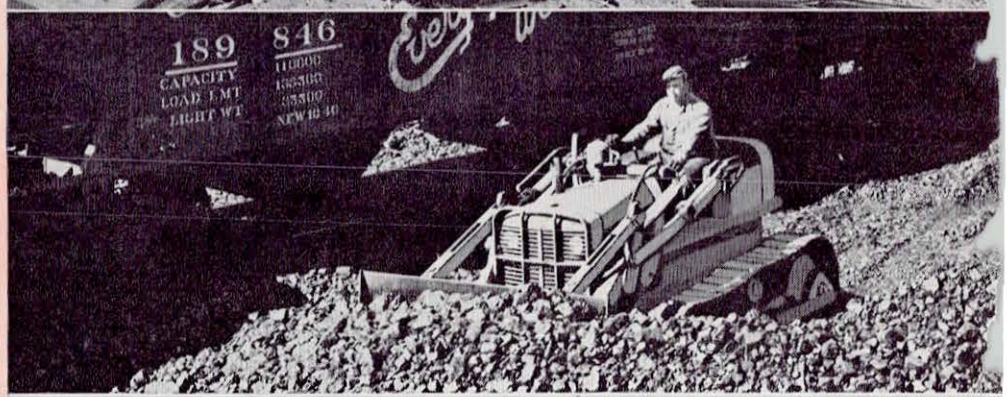


## FAST WORKING

Allis-Chalmers Tractors quickly return tracks to service after wrecks, washouts, other traffic interruptions . . . are easily moved by flat car, trailer or under own power, go into action immediately . . . work at many points all along tie-up . . . build shooflies in record time.

## VERSATILE

Allis-Chalmers Diesel Tractors are used with bulldozers, scrapers or front end shovels on stockpiling—also with rollers, rippers, graders, snow plows, winches, tractor cranes on any number of jobs. Go anywhere . . . handle grading jobs impossible to reach with work trains.




## FLEXIBLE

You can put exactly the number of tractors on a job that are required—one or two on a regular job or a fleet on a big, rush project. There is a right size Allis-Chalmers tractor for any grading or maintenance job.

**NO INTERFERENCE**

**Operating free of the tracks, this Allis-Chalmers HD-7 Tractor with Gar Wood bulldozer and 5-yd. scraper keeps working while your trains go through on schedule — no interruption of traffic or maintenance work. Many railroads find that tractors put in as much as 50 percent more production time than rail-bound equipment.**

# One man WORK CREW

☆ ☆ ☆

ONE man grades slopes, backfills, easily handles ditching, diking — many other right-of-way jobs with an Allis-Chalmers 2-cycle Diesel Tractor equipped with bulldozer and 2-wheel, rear-dump scraper.

This fast-stepping outfit takes over much of the work of big track-bound equipment, does not interfere with rail traffic, relieves hand labor. It digs and loads toughest materials, carries and places them exactly where wanted — on slopes, around bridges, culverts, other close places. Ideal for stockpile maintenance.

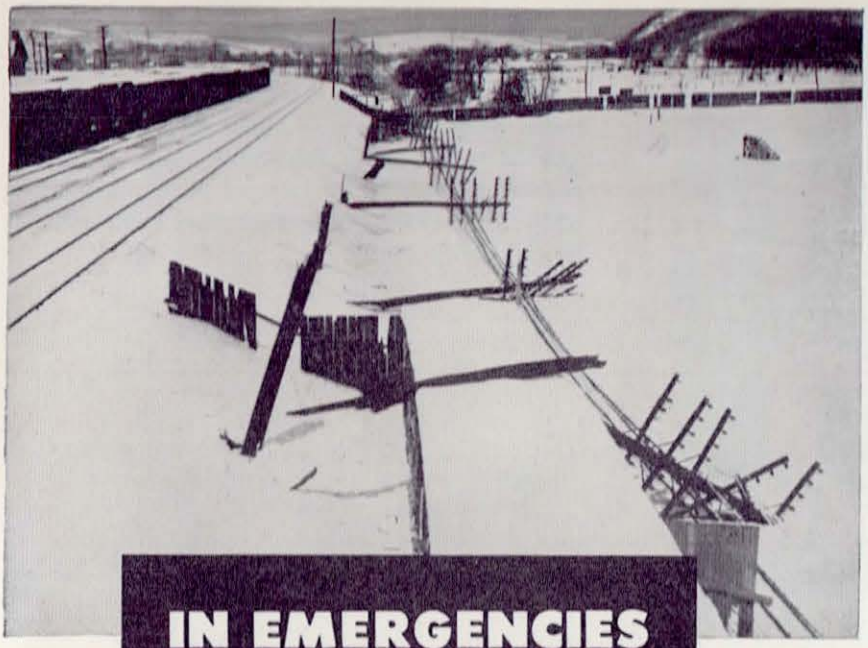
It will pay you to investigate this one-man outfit for reducing construction and maintenance costs. We will be glad to put you in touch with your Allis-Chalmers dealer for complete details.

2-cycle Diesel Tractors
4 Models
11,000 to 40,000 lb.

•

Motor Graders
Power Units
Road Machinery

**ALLIS-CHALMERS**
TRACTOR DIVISION • MILWAUKEE 1, U. S. A.

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Mr. Fitzhugh returned to the accounting department of the F. W. & D. C. in December, 1918, remaining in that department until October, 1929, when he was advanced to general accountant. He held the latter post at the time of his recent appointment as auditor of the two roads.

**C. E. Jennings,** car accountant of the Chicago & Eastern Illinois at Chicago, has retired after 41 years of service with that railroad, and has been succeeded by **Walter H. Soderlund.** Mr. Jennings was born at Claremont, Ill., on March 4, 1883, and began his railroad career on April 1, 1902, as a telegrapher with the Baltimore & Ohio Southwestern (now part of the B. & O. System). He later worked as a telegrapher for the Cleveland, Cincinnati, Chicago & St. Louis and the C. & E. I. at Pana, Ill., subsequently serving the latter road as coal weight and loading inspector, yardmaster, transportation inspector and local agent. He was advanced to chief clerk in the car accounting department at Chicago in November, 1936, and was promoted to car accountant in August, 1942.

**R. G. Bundy,** tax agent of the Chicago, Milwaukee, St. Paul & Pacific at Chicago, has been appointed tax commissioner at that point, succeeding **Floyd Williams,** who is retiring after nearly 43 years of service in the tax department. Mr. Williams, a native of Greeneville, Tenn., was graduated from the University of Tennessee and the New York Law School. He first entered service with the Milwaukee in 1906 as right-of-way and tax agent at Seattle, Wash., and subsequently was advanced to assistant to tax commissioner there. He was promoted to tax commissioner at Chicago in 1941, and served continuously in that position until his retirement.

## OPERATING

**V. A. Gordon,** assistant superintendent of the Missouri Pacific at St. Louis, Mo., has been transferred to Nevada, Mo., succeeding **Frank R. Woolford,** whose appointment as engineer maintenance of way and structures for the Western Pacific at San Francisco, Cal., was reported in the *Railway Age* of December 25, 1948. **Howard Jones,** trainmaster at Bush, Ill., has been promoted to assistant superintendent, replacing Mr. Gordon at St. Louis. **H. B. Davis,** also trainmaster at Bush, has been appointed to succeed Mr. Jones. **L. E. Smith,** master of trains and track for the Missouri-Illinois (part of the M. P.), with headquarters at Bonne Terre, Mo., has replaced Mr. Davis.

The Chicago Great Western has announced the following changes in its operating department: Headquarters of **H. Boller,** general superintendent, transferred from Chicago to Oelwein, Iowa; position of superintendent, Iowa division, abolished and **W. S. Hunter,** superintendent, assigned to other duties; **A. A.**

(*Continued on page 279*)

CLARK

Volume—BIGGER
Efficiency—GREATER
Cost—LOWER

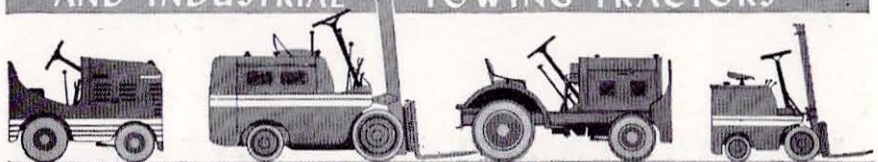
More and more businesses in more and more places are learning that the field of Materials Handling provides the best and the richest opportunities for cost reductions—for SAVINGS.

*"Use of the 'fork-truck-and-pallet' system has been greatly broadened and rapidly adopted by progressive warehouse operators. At North Pier Terminal we have used it for more than 5 years, in conjunction with the tractor-and-trailer system. We now operate 25 Clark machines and consider them a vital factor in handling an increasing volume of materials with increased efficiency and at greatly reduced costs."*

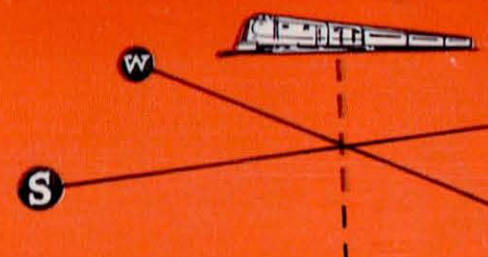
*North Pier Terminal Company*
*Chicago, Illinois*

For all of the facts about Modern Materials Handling Methods and Machines and what they can do for you, we invite you to: CONSULT CLARK.

CLARK ELECTRIC AND GAS POWERED FORK TRUCKS AND INDUSTRIAL TOWING TRACTORS



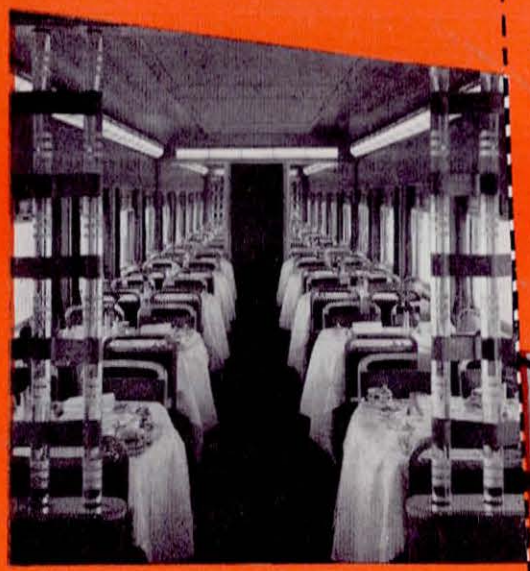
INDUSTRIAL TRUCK DIV., CLARK EQUIPMENT COMPANY BATTLE CREEK 24, MICH.
REPRESENTATIVES IN PRINCIPAL CITIES THROUGHOUT THE WORLD
AUTHORIZED CLARK INDUSTRIAL TRUCK PARTS AND SERVICE STATIONS IN STRATEGIC LOCATIONS




north
south
east
west

America's Finest Trains use

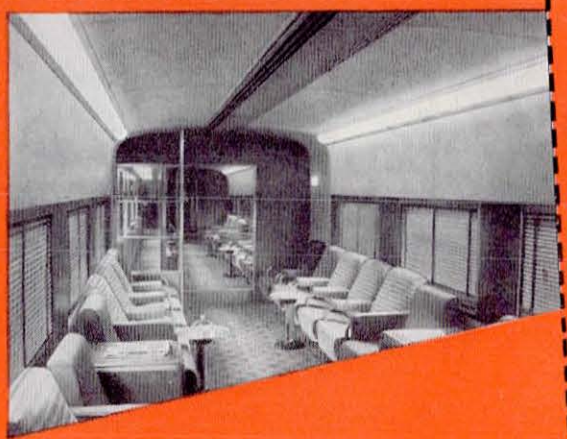
# LUMINATOR ENGINEERED LIGHTING



The Dining Car has added smart style and efficiency with Luminator lensed glassware fixtures engineered to provide a higher intensity glareless light for the dining table areas.

The Restaurant Lounge Car uses a fixture designed, engineered and constructed by Luminator. It projects a high intensity light to the reading and eating levels without distracting glare or shadows.

This modern Lounge Car is lighted by Luminator engineered fixtures... direct glare and contrast glare have been reduced to a comfortable degree creating a cheerful brightness. They're dustproof... provide long life ... require little maintenance.



Atchison, Topeka & Santa Fe
Atlantic Coast Line
Baltimore & Ohio
Boston & Maine
Canadian National
Canadian Pacific
Central of Georgia
Central R.R. Co. of N. J.
Chesapeake & Ohio
Chicago & Eastern Illinois
Chicago & Northwestern
Chicago, Burlington & Quincy
Chicago Great Western
Chicago, Indianapolis & Louisville
Chicago, Milwaukee, St. Paul & Pacific
Chicago, Rock Island & Pacific
Chicago, St. Paul, Minneapolis & Omaha
Delaware & Hudson
Delaware, Lackawanna & Western
Denver & Rio Grande Western
Erie
Florida East Coast
Great Northern
Gulf, Mobile & Ohio
Illinois Central
Kansas City Southern
Lehigh Valley
Louisville & Nashville
Minneapolis, St. Paul & Sault Ste. Marie
Missouri-Kansas-Texas
Missouri Pacific
Nashville, Chattanooga & St. Louis
New York Central
New York, Chicago & St. Louis
Norfolk & Western
New York, New Haven & Hartford
Northern Pacific
Pennsylvania
Pere Marquette
Pittsburgh & Lake Erie
Reading Company
Richmond, Fredericksburg & Potomac
St. Louis-San Francisco
Seaboard Air Line
Southern Railway System
Southern Pacific
Spokane, Portland & Seattle
Texas & Pacific
Union Pacific
Wabash

LUMINATOR

LIGHTING ENGINEERS • DESIGNERS • MANUFACTURERS

120 NORTH PEORIA STREET • CHICAGO 80, ILLINOIS

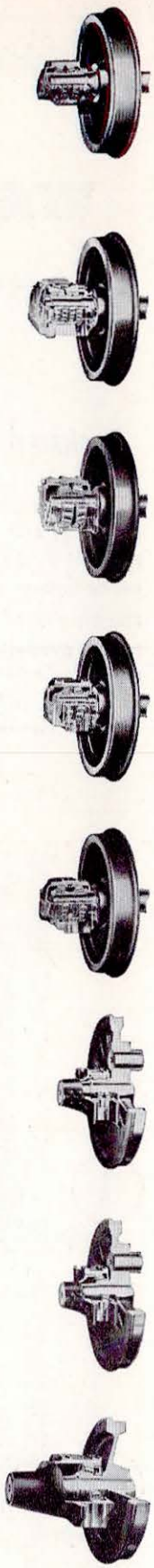
# MAIN LINE RAILROAD EQUIPMENT ON TIMKEN® BEARINGS

## COMPLETE SUMMARY AS OF DECEMBER 1, 1948

### *(In Service, On Order and Under Construction)*

The following summary comprises all cars and locomotives equipped with Timken roller bearings from 1925 to 1948 inclusive, representing 88 railroads:

| | |
|---|---|
| Business Cars | 33 |
| Diesel Locomotives | 1,565 |
| Electric Locomotives | 265 |
| Freight Cars—(High Speed Service) | 2,670 |
| Freight Cars—(Industrial and Misc. Service) | 1,144 |
| Passenger Cars | 4,958 |
| Steam Locomotives—(Engine Trucks) | 4,078 |
| Steam Locomotives—(Drivers) | 2,084 |
| Steam Locomotives—(Trailers) | 3,255 |
| Steam Locomotives—(Rods) | 171 |
| Steam Locomotives—(Reciprocating Parts) | 398 |
| Steam Locomotives—(Tenders) | 2,576 |
| Steam Locomotives—(Complete All Axles) | 1,501 |



**THE TIMKEN ROLLER BEARING COMPANY, CANTON 6, OHIO**

CABLE ADDRESS "TIMROSCO"

NOT JUST A BALL ○ NOT JUST A ROLLER ▭ THE TIMKEN TAPERED ROLLER ▱ BEARING TAKES RADIAL ◎ AND THRUST →◎← LOADS OR ANY COMBINATION ✳

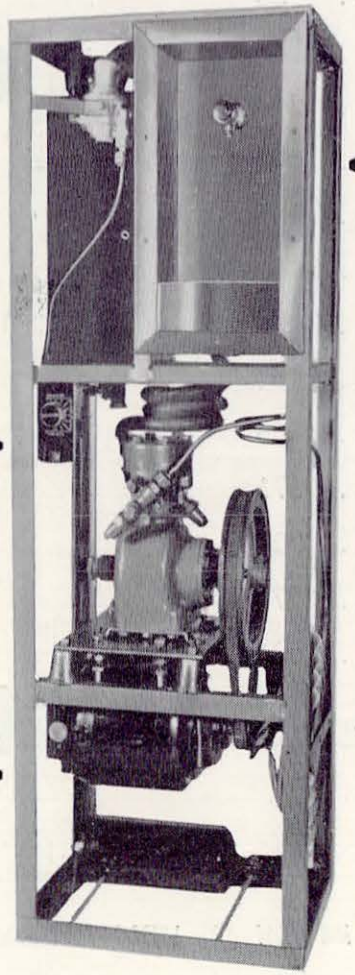
# *Diesel Locomotive Cab*
# Electric
# WATER COOLER

- something absolutely new
- nothing like it on the market
- rugged . . . efficient

***Designed specifically for Diesel Locomotives***

HERE is a complete, compact unit (right) which will deliver 3½ gallons of 50° water per hour, under conditions normal in Diesel locomotive cabs. It's easily installed; just provide a waste outlet, bolt cooler to floor, plug in, and cold water is available in three minutes.

Sturdily built for railroad use, this new Marquette cooler has copper tubing, stainless steel lowside and alcove, and large condenser and motor for reliable durability. All working parts are available for easy servicing by removing side panel. Quiet in operation; draws minimum electric current.




(1) Adjustable temperature control mounted any side, any height, to your specifications.

(2) Motor current to suit installation. All parts made for rugged duty.

(3) Stainless steel splash-proof alcove mounted any side, any height, or separate from unit.

## THE MARQUETTE RAILWAY WATER COOLER

- can be installed in any position
- can be serviced from any side
- in use on railroads throughout America

THE Marquette Railway Water Cooler (left) designed and constructed to meet the demands of railroad use, cools 3¼ gallons of water per hour from 80° to 50°. Heavy duty single cylinder compression motor uses optional voltage or current. Cooling tank is valve-equipped for easy flushing; pressure regulator controls flow of water at inlet.

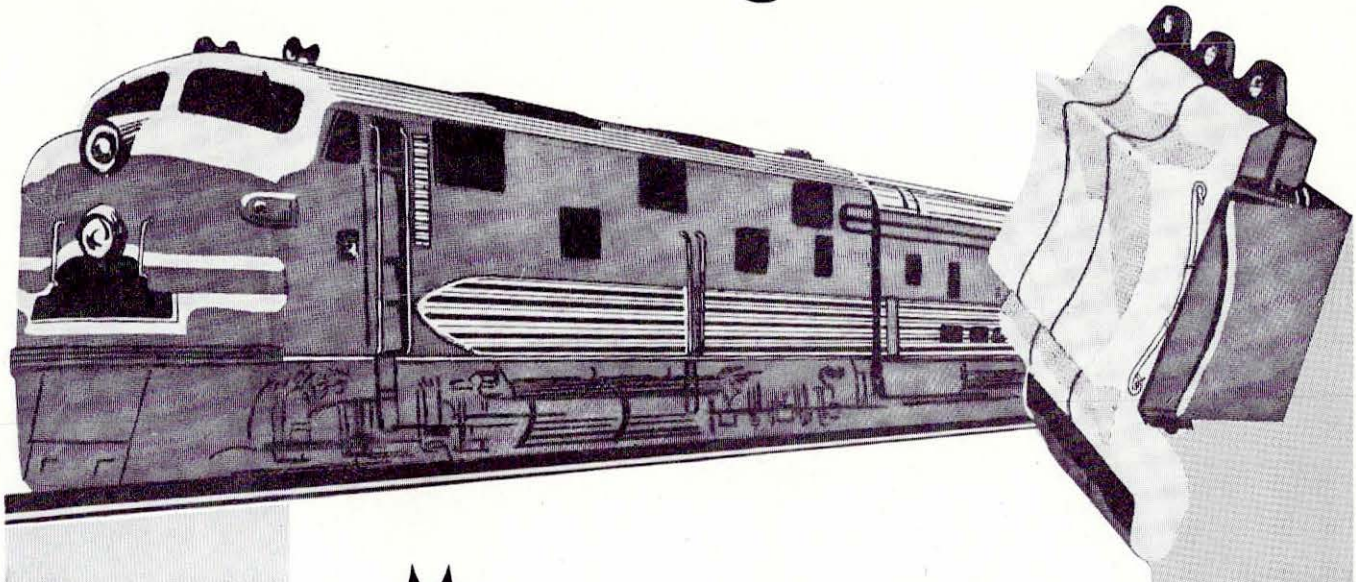
***Pioneers in building water coolers especially for railroads.***

**MARQUETTE RAILWAY SUPPLY CO.**

332 South Michigan Ave. Chicago 4, Illinois

# for Diesel locomotive traction motors

## *Truly* MODERN *Lubrication*



Millions of miles of trouble-free performance on 30 of the nation's Class I railroads have proven that bearing liner life is greatly increased by the use of the FELPAX Motor Suspension Bearing Lubricator.

*For full particulars see your locomotive builder, or write to*

**MILLER FELPAX CORPORATION**
**WINONA, MINNESOTA**

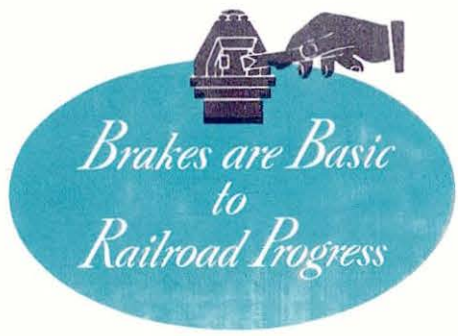
# It takes a lot of different BRAKES to run a railroad

Speeding passenger trains to destination on fast schedules . . . pouring multitudes of commuters into cities each morning and transporting them back to the suburbs at night . . . snaking long, heavily laden merchandise trains over the mountains and across the plains . . . shifting cars and making up trains in classification yards . . . each of these familiar railroad jobs calls for something different in brakes. And Westinghouse Air Brake Company makes it a life-time business to supply just what is needed.

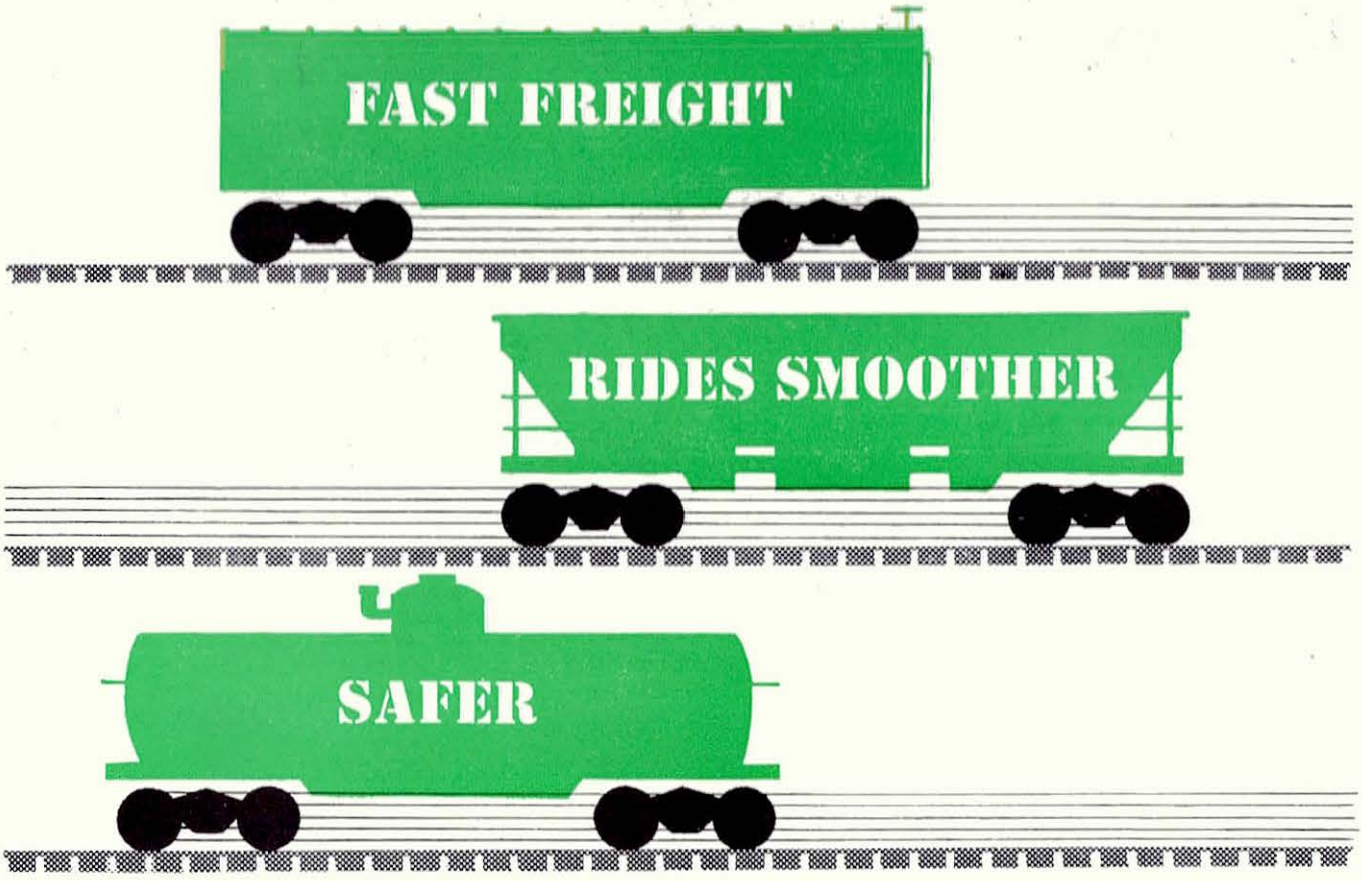
A continuous research program, coordinated with the development plans and programs of the railroads, assures that the right equipment will always be available for every assignment. There's the 24-RL, available in combinations to meet a wide range of locomotive braking needs. There's the HSC Electro-pneumatic equipment with speed governor control and decelostat, for modern "rail-liners." There's the 6DS, specifically designed for Diesel switching units. There's the AB, that gives unsurpassed control of freight trains. There are such new products as the Westinghouse-Union Hot Bearing Detector, that immediately warns of abnormal bearing temperature. And there are still other new developments under way that anticipate the requirements of tomorrow.

## Westinghouse Air Brake Co.

WILMERDING, PA.

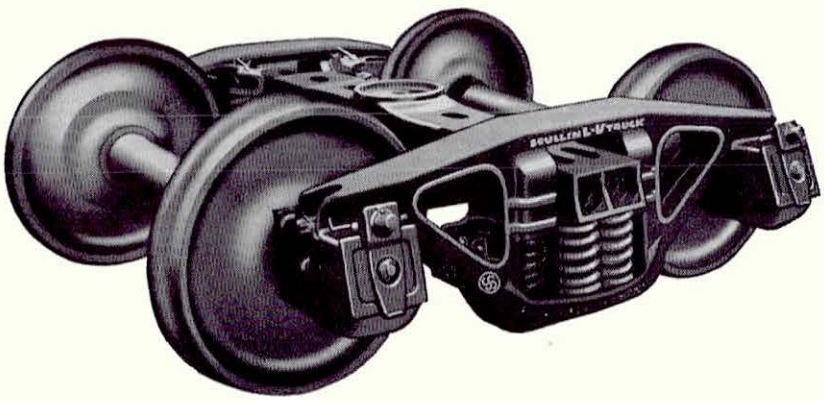


regular road service is delivering
more evidence every day.....




on the SCULLIN L-V TRUCK (LATERAL VERTICAL CUSHIONED MOTION)

cushions and controls *both* lateral and vertical motion
... *without* costly maintenance!



STEEL CASTING MANUFACTURERS SINCE 1899

**SCULLIN STEEL CO.**
SAINT LOUIS 10, MISSOURI

NEW YORK • CHICAGO • CLEVELAND • BALTIMORE • RICHMOND, VA. • MEXICO CITY, D. F.

(*Continued from page* 271)

**Freiberger,** superintendent at Oelwein, given jurisdiction over both the Illinois and Iowa divisions; and **W. L. Smith** appointed trainmaster, Iowa division, with headquarters at Des Moines, Iowa, succeeding **J. R. Jones,** assigned to other duties.

**Joseph E. Ballard,** whose promotion to superintendent of perishable freight service of the Illinois Central at Chicago, was reported in the *Railway Age* of December 11, was born at St. Francis, Ky., on January 6, 1894. He attended Jasper College at Jasper, Ind., from 1907 to 1908, and Ogden College at Bowling Green, Ky., in 1909, transferring the next year to Bowling Green Business University in that city. He entered railway service on September 16, 1910, as a clerk in the refrigerator

Joseph E. Ballard

accounts division of the I. C. at Chicago. From October, 1918, to April, 1920, he served as reconsigning clerk in the perishable freight service department at Chicago, subsequently becoming traveling agent in April, 1920, and advancing to assistant chief clerk in that department in June, 1930. Mr. Ballard was appointed supervisor of perishable freight service at Chicago in February, 1941, which position he held at the time of his recent promotion.

**G. O. Armstrong,** trainmaster of the Illinois Central, with headquarters at Clinton, Ill., has been transferred to Memphis, Tenn., succeeding **B. M. Luttrell,** who has been granted a leave of absence due to illness. **F. B. Noonan,** trainmaster at Carbondale, Ill., has replaced Mr. Armstrong and has been succeeded by **J. W. Dodge,** trainmaster at Chicago. **B. P. Smith** has succeeded Mr. Dodge.

**W. R. Mann,** assistant superintendent of the Southern Pacific lines in Texas and Louisiana, with headquarters at San Antonio, Tex., has been appointed chairman, board of rules examiners, at Houston, Tex., succeeding **Thomas G. Gready,** who has retired. **Leslie McDonald,** trainmaster at Houston, has replaced

(*Continued on page* 280)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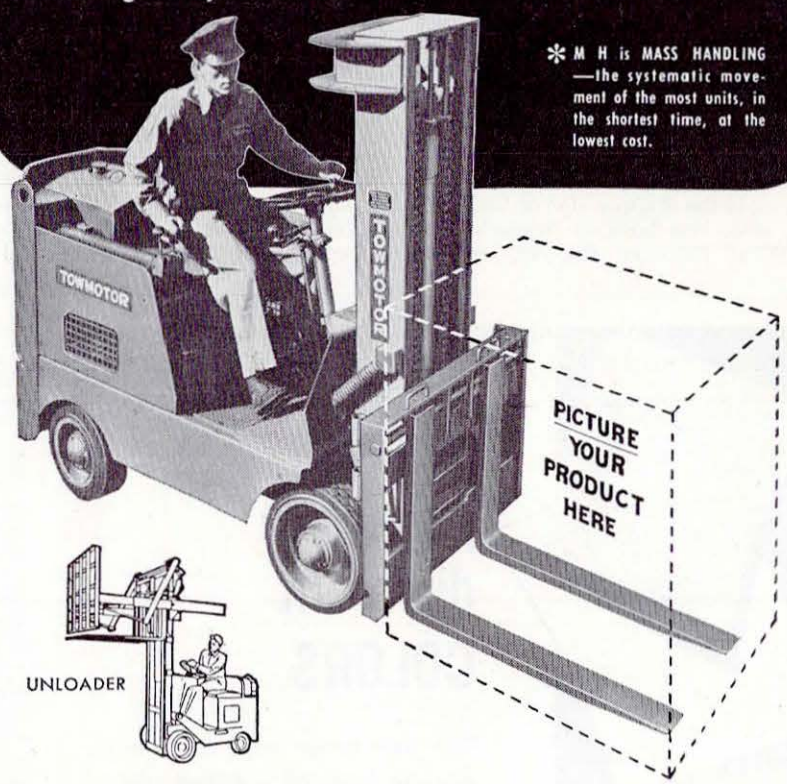


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(*Continued from page 279*)

Mr. Mann. **P. C. Mayes,** assistant terminal trainmaster, at Houston, has been promoted to succeed Mr. McDonald.

## TRAFFIC

**Christian Bieze,** chief of the passenger rate bureau of the Chicago, Burlington & Quincy at Chicago, has been appointed assistant general passenger agent at that point.

**Fred McGee,** division freight and passenger agent of the Missouri-Kansas-Texas at Tulsa, Okla., has been promoted to assistant general freight and passenger agent at that point. His former position has been abolished.

**Ralph W. Cooke,** special representative in the freight traffic department of the Pennsylvania at Chicago, has retired after nearly 52 years of service with the road.

**H. Gower** has been appointed general agent of the Charleston & Western Carolina at Spartanburg, S. C. **D. U. Harrell** has been appointed general agent at Greenville, S. C.

**Arthur W. Gill,** whose retirement as general freight agent of the Southern system at Cincinnati, Ohio, was reported in the *Railway Age* of December 25, 1948, was born on September 28, 1883, at Leicester, England, and attended school at Brighton England, and Norwood, Ohio. Upon graduation from high school in the latter city, Mr. Gill entered railway service with the Cleveland, Cincinnati, Chicago & St. Louis (now part of the New York Central System) as a mail clerk in the freight claim department. In 1905 he joined the Southern System at Cincinnati as a clerk. He was subsequently advanced to freight traffic manager, and in November, 1924, was appointed assistant general freight agent. Mr. Gill was promoted to general freight agent in September, 1927.

**J. Lawrence Chapman,** secretary to the vice-president—traffic of the Erie at Cleveland, Ohio, has been appointed general agent at Detroit, Mich.

**Harry J. Nelson,** whose appointment as general western traffic manager of the Illinois Central at San Francisco, Cal., was reported in the *Railway Age* of December 25, 1948, is a native of Nebraska. He served in various positions with several railroads at Seattle, Wash., and Portland, Ore., before joining the I. C. at the latter point in 1912 as city freight agent. In 1913 he was promoted to traveling freight and passenger agent at Portland, remaining there until 1918, when he was employed by the Tindolph Company at Seattle. When government control ended in 1920, he was appointed commercial agent for the I. C. at Portland, and in 1922 was transferred to Seattle in the same position. Mr. Nelson returned to Portland in 1932 as general agent with jurisdiction over the northwestern area, and was advanced to general western agent at San Francisco in December, 1943, in which position he was serving at the time of his recent appointment.

**Robert N. Woodall,** whose promotion to freight traffic manager of the Southern System at Cincinnati, Ohio, was reported in the *Railway Age* of December 4, was born on August 11, 1904, at Lynchburg, Va., and attended the public schools there. He began his railway career in May, 1922, as a messenger in the division freight agent's office of the Southern at Lynchburg. He later held stenographic and clerical positions in that department, and in March, 1933, was promoted to chief clerk to the New England freight agent at Boston, Mass., returning to Lynchburg later that year

Robert N. Woodall

as commercial agent. He was advanced to district freight and passenger agent at New York in July, 1936, subsequently serving as general eastern freight agent at that point. In May, 1939, Mr. Woodall was appointed general agent at Pittsburgh, Pa., and in April, 1941, he was made assistant freight traffic manager at New Orleans, La. He became eastern traffic manager at New York in December, 1943, and was holding that position at the time of his promotion to freight traffic manager at Cincinnati.

**J. J. Nolan,** assistant passenger traffic manager of the Pullman Company at Chicago, has been promoted to passenger traffic manager, succeeding **E. P. Burke,** who has retired after 49 years of continuous service in the passenger department. **G. S. Chappell, Jr.,** assistant general passenger agent, has replaced Mr. Nolan.

**James K. Weston,** assistant general freight and passenger agent of the Toronto, Hamilton & Buffalo, has been appointed general freight and passenger agent, with headquarters as before at Hamilton, Ont., succeeding **Rowland F. Hill,** who has resigned on the advice of his physician, after 42 years in the traf-

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fic department of that road. **William T. Galloway** succeeds Mr. Weston as assistant general freight and passenger agent.

**G. W. Rodine,** western passenger traffic manager of the Northern Pacific at Seattle, Wash., has been appointed passenger traffic manager at St. Paul, Minn., succeeding **Emil E. Nelson,** who has retired after 48 years of service in the passenger department. **F. G. Scott,** general agent at Chicago, has replaced Mr. Rodine, and in turn is succeeded by **H. F. Compton,** city passenger agent at the same point.

## MECHANICAL

**H. S. Marsh,** assistant superintendent—car department of the Missouri Pacific at St. Louis, Mo., has been promoted to superintendent of that department, succeeding **O. H. Clark,** resigned. **E. H. Hinrichs** has replaced Mr. Marsh.

**John W. Hawthorne,** superintendent motive power of the Central of Georgia at Savannah, Ga., has been appointed assistant chief of motive power and equipment of the Atlantic Coast Line at Wilmington, N. C.

**K. F. Nystrom,** chief mechanical officer of the Chicago, Milwaukee, St. Paul & Pacific at Milwaukee, Wis., has announced his intention to retire on January 31.

## PURCHASES and STORES

**J. J. McCoy** has resumed his position as district storekeeper of the Chicago, Burlington & Quincy at Chicago, succeeding **W. E. Bird,** who has served temporarily in that position.

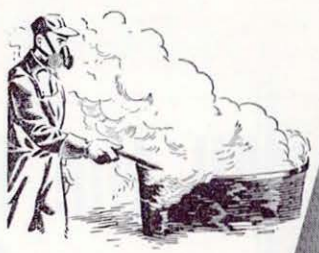
**John E. Thraff,** assistant general storekeeper of the Great Northern at St. Paul, Minn., has been advanced to general storekeeper at that point, succeeding **Howard Hayes,** retired. **Edwin M. Pulsifer,** traveling storekeeper, at Spokane, Wash., has succeeded Mr. Thraff.

**A. E. Yelland** has been appointed purchasing agent and chief clerk for the Lake Superior & Ishpeming at Marquette, Mich.

## ENGINEERING and SIGNALING

**Claude E. Cox,** assistant chief engineer of the Chicago Union Station at Chicago, has retired after almost 48 years of railroad service. He was born on December 28, 1878, at Vallonia, Ind., and began his railway career in the engineering department of the Pennsylvania in 1901, joining the Illinois Central in 1904. He was employed by the Chicago, Milwaukee, St. Paul & Pacific the next year, and in October, 1915, entered the service of the Chicago

(*Continued on page* 282)



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(*Continued from page* 281)

Union Station, leaving that company in 1918 to work for the United States Railroad Administration. Mr. Cox returned to the Union Station at Chicago in 1919 and served continuously until his recent retirement.

**Charles H. Tobin** has been appointed signal engineer and superintendent of telegraph of the Delaware & Hudson, at Albany, N. Y., succeeding **A. H. Rice,** who has retired after 54 years of service with this road.

**W. R. Roof,** engineer bridges and buildings of the Chicago Great Western at Chicago, has retired after 39 years of service with that road.

**Robert B. Elsworth,** signal engineer of the New York Central—Buffalo and East, with headquarters at Albany, N. Y., has retired and has been succeeded by **Arthur Stead Haigh,** assistant signal engineer there. Mr. Haigh's jurisdiction will include the Boston & Albany. **R. J. Cullen,** signal engineer, B. & A., at Boston, Mass., has been promoted to succeed Mr. Haigh, at Albany. **J. W. Curran,** principal assistant engineer, signal department, B. & A., has been appointed assistant signal engineer, B. & A., with headquarters as before at Boston.

## SPECIAL

**Miss Virginia Tanner,** assistant editor of the Baltimore & Ohio magazine, has been appointed editor. **Mrs. Inez DeVille,** field editor, has been appointed associate editor.

**Harry E. Hammer,** special representative of the Association of American Railroads, has been appointed manager of the A.A.R.'s press and radio service. Mr. Hammer was formerly director of public relations for Johns Hopkins Hospital, Baltimore, Md., and for the Air Force Association, Washington, D. C.

## OBITUARY

**Harry G. Hostetter,** superintendent of the Middle division of the Pennsylvania at Altoona, Pa., died of a heart attack at his home there on December 24, 1948.

**William C. Hull,** who retired in December, 1946, as vice-president, traffic, of the Chesapeake & Ohio at Cleveland, Ohio, died on December 21, 1948, after a long illness.

**George H. Clark,** former assistant freight traffic manager of the New York Central at New York, who retired in 1943, died on January 1 of a heart attack at his home in Tuckahoe, N. Y. He was 71 years old.

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The impact mechanism rotates at motor speed until resistance at the spindle is set up, then it begins to impact.

Simplicity of construction, oversize bearings at the impact surfaces and built-in automatic lubrication for the motor promote continuous production, trouble-free operation and long service life.

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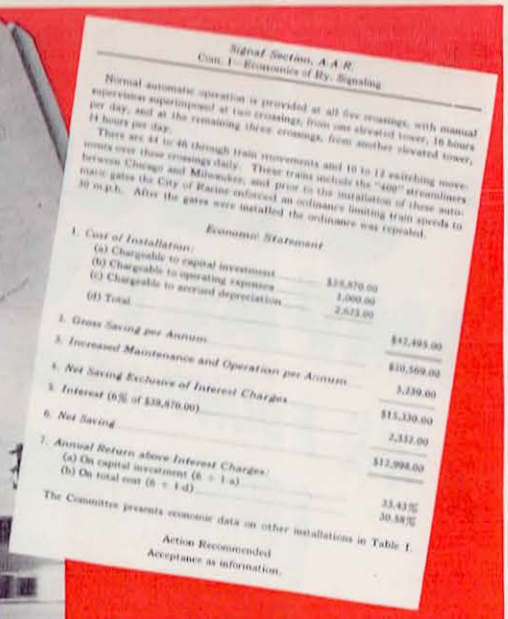
## COST ANALYSES PROVE THE ECONOMY OF Model 10 CROSSING PROTECTION



Signal Section, A.A.R.
Com. 1—Economics of Ry. Signaling

Normal automatic operation is provided at all five crossings, with manual supervision superimposed at two crossings, from one elevated tower, 16 hours per day, and at the remaining three crossings, from another elevated tower, 14 hours per day.

There are 44 to 46 through train movements and 10 to 12 switching movements over these crossings daily. These trains include the "400" streamliners between Chicago and Milwaukee, and prior to the installation of these automatic gates the City of Racine enforced an ordinance limiting train speeds to 30 m.p.h. After the gates were installed the ordinance was repealed.

Economic Statement

| | |
|---|---|
| 1. Cost of Installation: | |
| (a) Chargeable to capital investment | $38,870.00 |
| (b) Chargeable to operating expenses | 1,000.00 |
| (c) Chargeable to accrued depreciation | 2,525.00 |
| (d) Total | |
| 2. Gross Saving per Annum | $42,495.00 |
| 3. Increased Maintenance and Operation per Annum | $10,569.00 |
| 4. Net Saving Exclusive of Interest Charges | 3,339.00 |
| 5. Interest (6% of $38,870.00) | $13,330.00 |
| 6. Net Saving | 2,332.00 |
| 7. Annual Return above Interest Charges: | $12,998.00 |
| (a) On capital investment (6 ÷ 1-a) | 33.43% |
| (b) On total cost (6 ÷ 1-d) | 30.58% |

The Committee presents economic data on other installations in Table I.

Action Recommended
Acceptance as information.

*One of the five street crossings in Racine, Wisconsin, which the C.&N.W. (1944) protected with Model 10 Signals. Previous to the installation of Model 10's, these crossings were guarded by watchmen and manually operated gates. Train speeds through Racine were limited, by city ordinance, to 30 m.p.h. Since Model 10's were placed in service, this ordinance has been repealed.*

This economic statement* covering five crossings at Racine, Wisconsin, tells a typical dollar and cents story of Model 10 protection. To the net saving in *cash*, add the saving in *human life*. That's the true picture of Model 10 economy.

*Committee reports, Signal Section, A.A.R.

Yes, gentlemen, cost reports* prove conclusively that Model 10 Automatic Signals, replacing watchmen or manually operated gates, effect substantial savings — 40 to 100 per cent of the original cost of Model 10's during their first year of service.

In addition, Model 10's provide *positive safety at crossings, 24 hours a day* — positively eliminate the hazards of "man failure" and part-time protection. Frequently, local ordinances limiting train speeds are repealed after Model 10's are installed.

The paramount reason, of course, for the widespread acceptance of Model 10 Signals is *life-saving performance*. Look at the record: thousands of Model 10's guard the busiest crossings of nearly a hundred railroads, yet NOT ONE FATALITY has ever occurred as a result of operation failure on the part of these signals.

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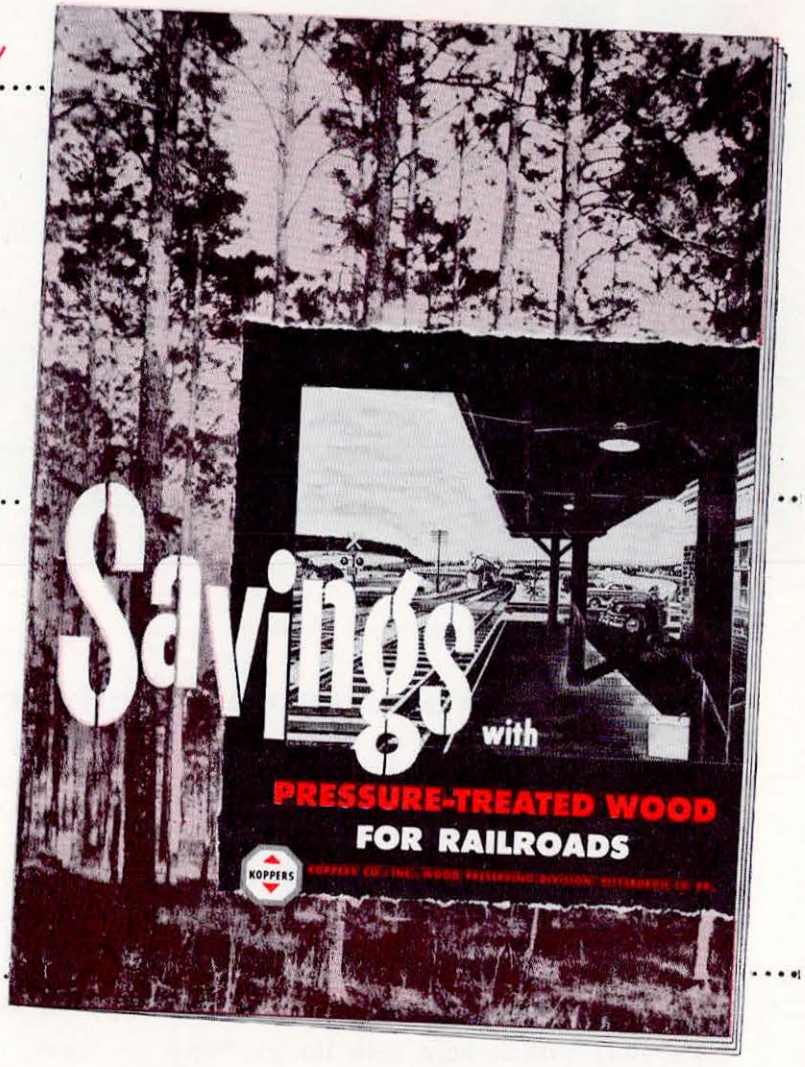


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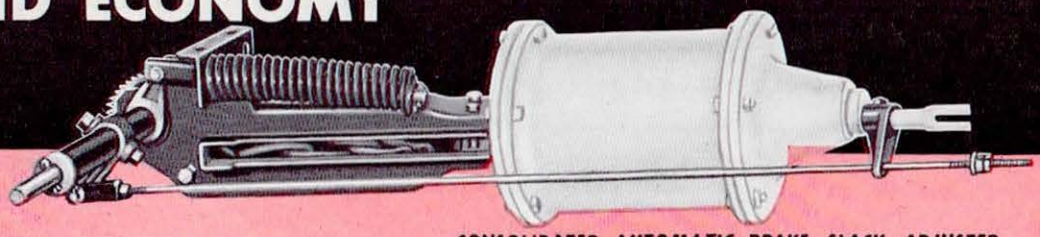

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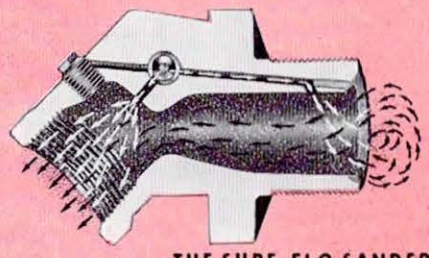

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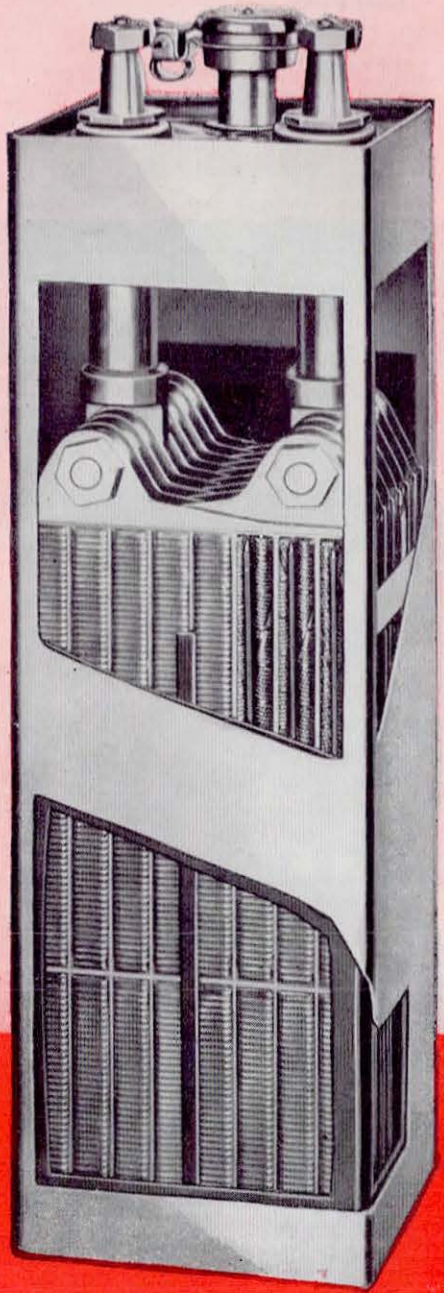

Cutaway view of A8H Edison cell at right illustrates its all-steel construction, including the tubular positive plates.

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Please mail me a FREE copy of the descriptive booklet on Motorola "QUIK-CALL" selective signaling equipment.

Name .....Position.....

Address.....

City.....Zone.....State.....

Mr. Fred G. Gurley, President
The Atchison, Topeka, and Santa Fe Railway Company

# "We have been cooperating with Bendix Radio in the development of VHF two-way radio equipment since 1944, and are constantly increasing our use of this new facility."

The Santa Fe, one of the largest users of train radio communications, has a constant record of growth in the application of money-saving, efficient two-way radio telephones. Here is what Mr. Fred G. Gurley, president of the Santa Fe says about the continuing progress of his great railroad in applying the new communication facility: "Each year since the advent of modern VHF radio telephones, the Santa Fe has increased its efficiency of operation by making wider installations and use of radio communications.

"Since the final allocation of frequencies for railroad use by the FCC December 31, 1945, we have placed in service 106 mobile units and 8 fixed stations for yard and terminal operation. We have partially completed the installation of 97 additional units in front and rear service. Supplementing this wide application, we have in service 10 walkie-talkie units for yard checking and other services in an effort to extend the use of radio to newer fields.

"Our plans for the near future call for an additional 100 mobile units and 6 new fixed stations for yard and terminal operation."

This case history, and the progress reported by many other great railroads, shows again how money-saving Bendix train radio is helping to increase the efficiency of modern railroad operation.

**MORE RAILROADS USE MORE BENDIX VHF TRAIN RADIO THAN ALL OTHER TYPES COMBINED**

BENDIX RADIO
REG. U.S. PAT. OFF.

Bendix V.H.F. Radio

BALTIMORE 4 MARYLAND

PRODUCT OF Bendix AVIATION CORPORATION

Export Sales: Bendix International Division, 72 Fifth Avenue, New York 11, New York

# LEADING BUILDERS SPECIFY "EDWARDS"...

Edwards Streamlined Trap Doors and Retractable Steps combine full balancing action with 6-way adjustment. Operating efficiency is stepped up... original installation is precise, easy, economical. Now used by the Missouri Pacific and many other leading lines, Edwards' units are available in steel, aluminum, stainless steel or a combination construction. For specifications and complete data, write:

SASH FOR EVERY TYPE OF TRANSPORTATION — ON LAND, ON THE SEAS, IN THE AIR

**THE O. M. EDWARDS CO., INC. • SYRACUSE 4, NEW YORK**

IN CANADA:

**O. M. EDWARDS CO.** OF CANADA LIMITED

Offices and Plant: 4000 NAMUR STREET, MONTREAL 16

STREAMLINED TRAP DOORS AND RETRACTABLE STEPS
FOR THE MAINLINERS
EASILY INSTALLED . . . EASILY ADJUSTED

THE MISSOURI PACIFIC'S NEW 5-BEDROOM AND LOUNGE CAR.
BUILT BY PULLMAN STANDARD . . . EQUIPPED BY EDWARDS.

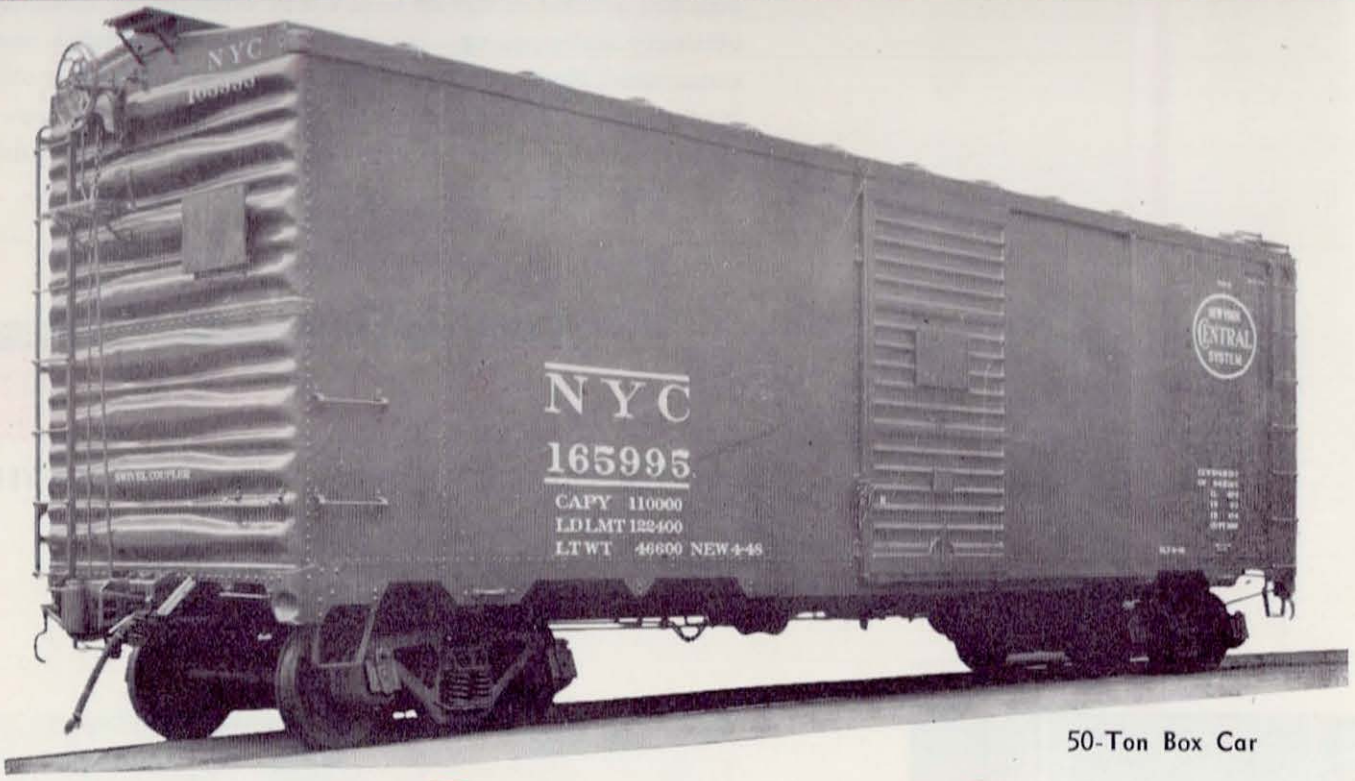
By the makers of...

**EDWARDS SASH**
**THE EYES OF TRANSPORTATION**

No Fog
No Film
No Frost

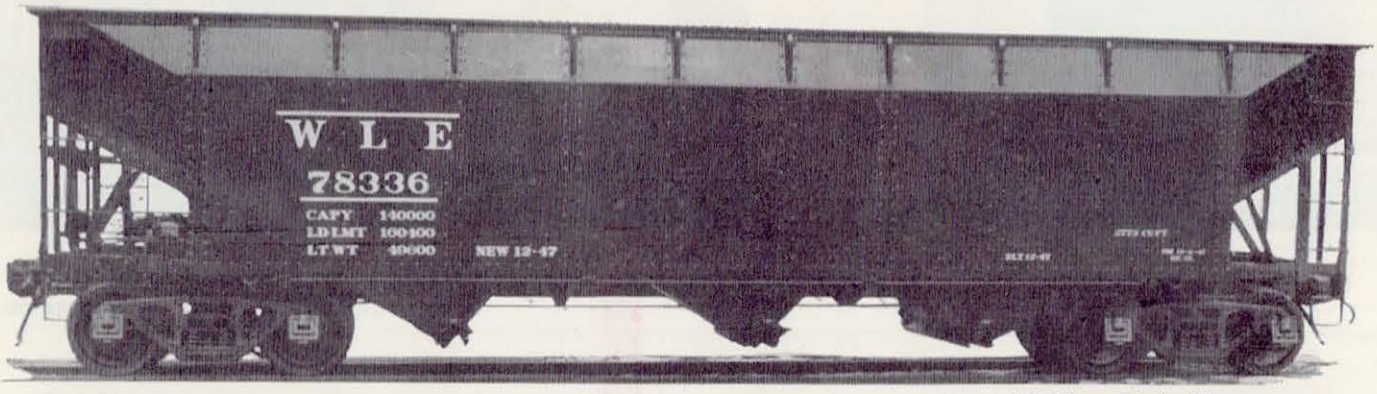
# GREENVILLE STEEL CAR COMPANY

A SUBSIDIARY OF PITTSBURGH FORGINGS COMPANY

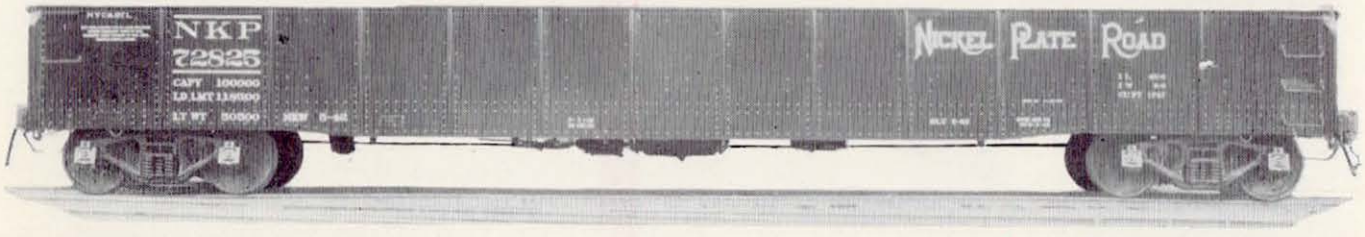



50-Ton Box Car

*Greenville*




70-Ton Triple Hopper




50-Ton Gondola

## GREENVILLE PENNSYLVANIA

GULF BLDG., PITTSBURGH, PA. 8-254 GENERAL MOTORS BLDG., DETROIT, MICH.

You can count on **penta** chlorophenol — treated poles and ties, too!

Probably the highest praise a railroad man can receive is to say, "he's dependable"!

Performance dependability is an important asset to any road. Railroad men are recognizing more and more that dependable preservative action is what you can expect from PENTAchlorophenol-protected poles and ties. They also like the clean treatment PENTAchlorophenol provides for walkways, platforms, loading docks and car lumber.

PENTAchlorophenol's deep penetration and low volatility add up to lasting preservative action . . . protection that lasts through the years, even under the severest climatic conditions.

Specify the PENTAchlorophenol treatment for safeguarding your crossties and poles . . . as well as sheds, platforms and other wood construction.

**THE DOW CHEMICAL COMPANY • MIDLAND, MICHIGAN**

DOW penta- chlorophenol

# The Crane

. . . the world's largest diesel-powered derrick crane, built by Industrial Brownhoist Corporation and placed in service by Norfolk and Western Railway, can lift and move 250 tons and travel at speeds up to 15 mph.

# The Job

. . . handling a wide variety of heavy loads and at the same time performing heavy-duty switching operations, this unique locomotive crane makes possible speedier and more efficient handling of derailed equipment.

# The Power

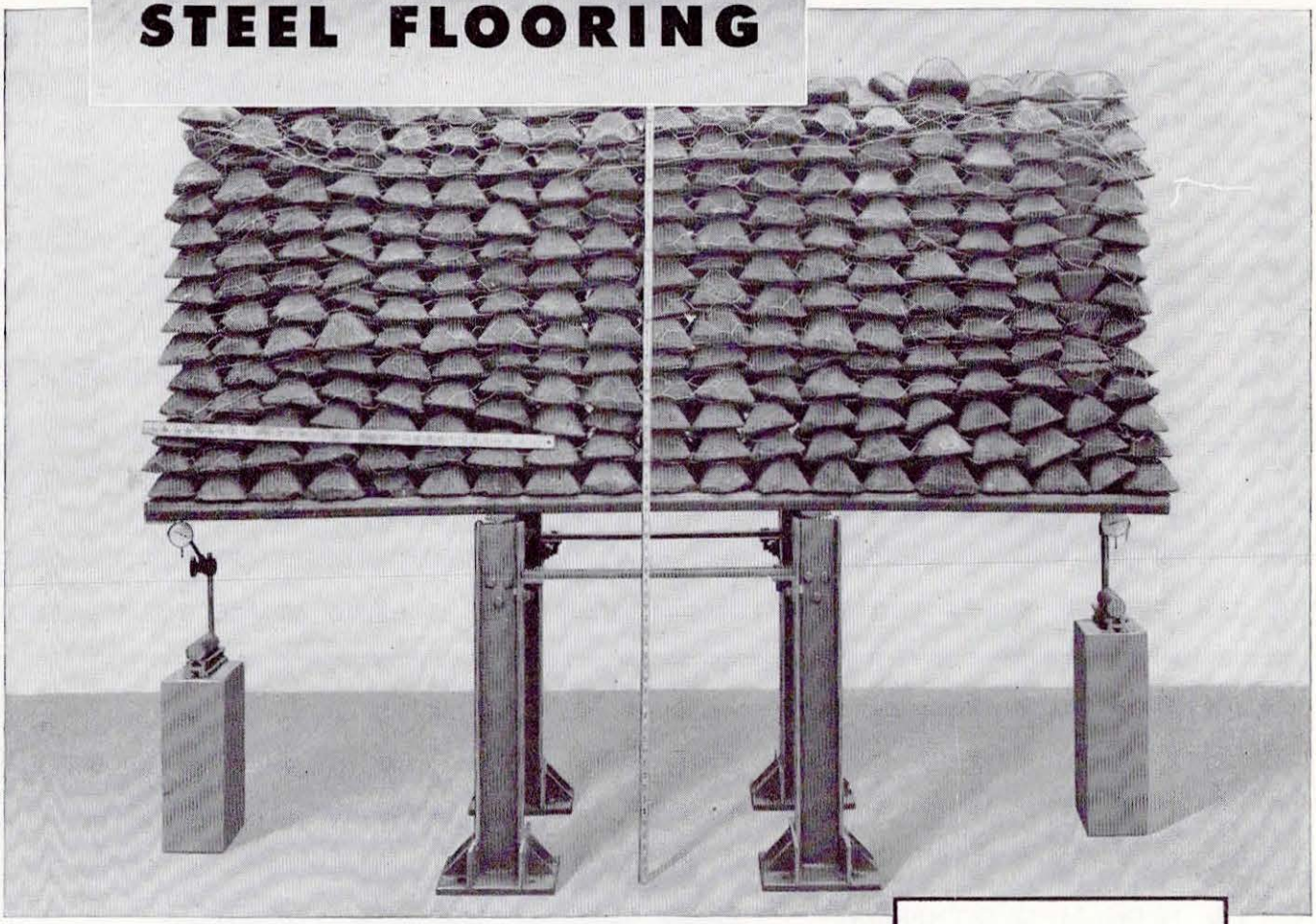
. . . two Model HBI-600 Cummins Diesels, operating together or singly, are always ready for continuous operation. Cummins Diesels were selected for this application because of Cummins proved performance in all types of railway applications . . . locomotive cranes, motorcars, locomotives and switchers.

**CUMMINS ENGINE COMPANY, INC., COLUMBUS, INDIANA**

**Cummins Diesel Railroad Equipment Company, Inc. • 1111 Grinnell Place • New York 59, N.Y. • Cable Address: MOTORTRAIN**

# STOP DANGEROUS AND COSTLY BOXCAR FLOOR BREAK-THROUGH WITH NAILABLE STEEL FLOORING

In Detroit Testing Laboratory test to determine cantilever strength, 11,000 lbs. of pig iron were loaded on a panel consisting of three NAILABLE STEEL FLOORING boxcar channels welded side by side. The cantilever span was 30". Under this floor load of 733 pounds per square foot—far in excess of heaviest freight loading—the NAILABLE STEEL FLOORING section *hadn't even reached the yield point.*



In actual use as well as in laboratory tests it has been proved that NAILABLE STEEL FLOORING can't break through under *any* kind of heavy freight. Boxcars with NAILABLE STEEL FLOORING have safely hauled heavy copper cakes, automobile engines, highly concentrated loads of sheet steel and tinplate as well as hundreds of other commodities.

### No Fork Truck Break-Throughs Either

NAILABLE STEEL FLOORING supports the biggest fork trucks, too, which so often break through conventional floors. For example, 23 cars are spotted each day at the Wabash Railroad's Ford Loading Dock in Detroit. Although they're all new or recently rebuilt, an average of *five* or *six* cars per day come in with large holes somewhere throughout the length of the floor where fork trucks have broken through.

### Durability Means Low Maintenance . . . Low Operating Costs

NAILABLE STEEL FLOORING stops the break-throughs—and a good many other common floor troubles. It isn't chewed up by pinch bars or rough freight. Although nails are tightly clinched, they don't tear, splinter or deform the floor. All this adds up to lower maintenance costs — and lower operating costs as well. When floors stay in good condition for all types of freight, cars require less switching and empty movement.

To eliminate dangerous break-throughs and reduce maintenance costs, specify NAILABLE STEEL FLOORING for the next boxcars you build or rebuild.

"Many delays and potential accidents have occurred and are continuing to occur, due to pig iron, lead, copper bars and similar commodities breaking through boxcar floors . . . this condition . . . is due to the type of equipment selected for this type of loading." (Car Department Officers Association Report by Committee on Preparation of Freight Cars, September 20, 1948)

NAILABLE STEEL FLOORING
A GREAT LAKES STEEL PRODUCT

## GREAT LAKES STEEL CORPORATION

**Steel Floor Division • 3576 Penobscot Building • Detroit 26, Michigan**

**UNIT OF NATIONAL STEEL CORPORATION**

"GEMCO TRU-BLU TOOLS." BEST TRACK TOOLS FOR TOP TONNAGE TRANSPORTATION! MADE BY:

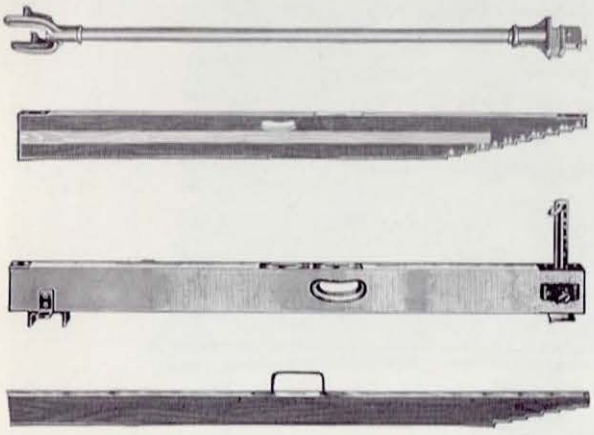
# GIBRALTAR EQUIPMENT & MANUFACTURING CO., ALTON, ILL.

ALL "GEMCO MASTER TRACKMEN'S TOOLS" ARE GEMS OF ENGINEERING DESIGN FOR TOPS IN EFFICIENCY!

ALL TYPES OF "GEMCO MASTER TRACKMEN'S" RAIL BENDERS.

"GEMCO MASTER TRACKMEN'S" TRU-BLU HEAVY DUTY CAR MOVERS

## THE "MASTER TRACKMEN'S" TRACK GAUGES and LEVELS



← AF89-No. 23 — Extra strong pipe center with cast steel ends.

← AF70 - No. 10 — Made of thoroughly seasoned Western Pine.

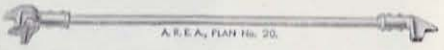
AF68-No. 5 — Made of thoroughly seasoned Western Pine. →

← AF164-No. 3 — Level 2 Adj. Levels.

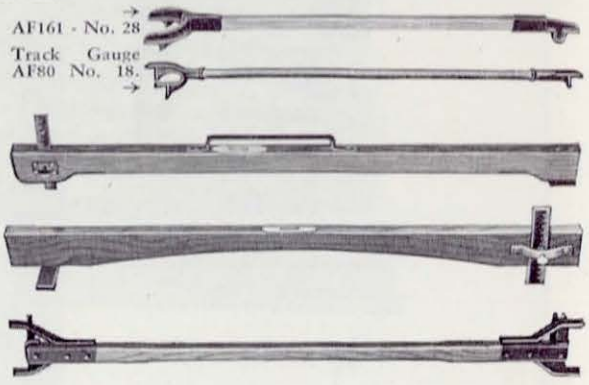
→ AF64-No. 1 — Made of Western Pine with hardwood bar.

← AF69 - No. 6 — Steel binding provide 3½ inch elevation.

→ AF97-No. 27—Latest approved A.R.E.A. Plan.




→ AF161 - No. 28 Track Gauge AF80 No. 18. →



YOU CAN GET THE TRACK TOOLS OF TOMORROW, TODAY; BY USING GEMCO TRU-BLU TOOLS!

# *The* DUO-THERMAL

## HOT WATER SYSTEM *for* RAIL CAR DINERS

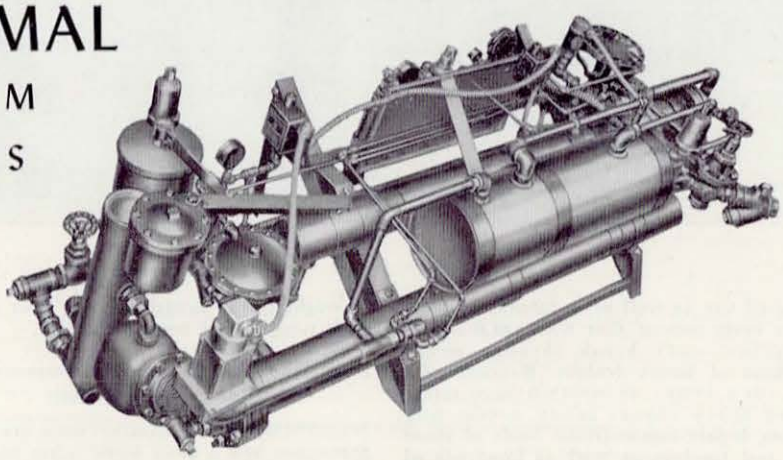
The McDonald DUO-THERMAL hot water system supplies *instantaneous* hot water at two temperatures, 130° and 190°, and eliminates completely the necessity of hot water storage tanks.

This innovation in rail car hot water supply enables users to comply readily with the new Interstate Quarantine Regulations issued by the Federal Security Agency.

Most advantageous, especially where water storage is a problem, is the elimination of hot water storage tanks. With the DUO-THERMAL *all* water carried may be available hot* or cold *as needed.*

Write today on your company letterhead for complete information on the DUO-THERMAL hot water system.

*At 130 degrees and 190 degrees



The DUO-THERMAL system employs two instantaneous heat exchangers. One of these exchangers raises cold water to 130-140 degrees, for use at sinks and for domestic hot water. The second exchanger raises 130 degree water to 180-190 degrees to furnish rinse water for the dishwasher or glass washer. In operation the system uses train line steam, electricity and the cold water supply.

## The McDONALD COMPANY

*Designers - Engineers - Manufacturers*
*Food Service Equipment*
43 LANSDOWNE STREET, BOSTON 15, MASS.

# America's most progressive roads

## use

# BENDIX-SCINTILLA

## fuel injection equipment!

Railroading probably has made more service improvements in recent years than in the entire preceding century. It has answered public demands with new and better accommodations, finer trains, smoother operating and more efficient locomotives. That's why people are more railroad-minded today than ever before!

The New York Central, like other progressive roads, consistently uses the finest equipment as a matter of policy. Like many others also, it expresses *complete* satisfaction with the Bendix-Scintilla fuel injection equipment now in use on a number of its new Diesel units.

**SCINTILLA MAGNETO DIVISION of**
**SIDNEY, NEW YORK**

Bendix
AVIATION CORPORATION

Export Sales: Bendix International Division, 72 Fifth Avenue, New York 11, New York

# *MECHANIZE*—CUT YOUR MATERIALS-HANDLING COSTS!

## *KRANE KAR*—Swing Boom Mobile Crane

2ND NATIONAL MATERIALS HANDLING EXPOSITION
CLEVELAND AUDITORIUM
JANUARY 12-16 1948
BOOTH No. 330

Wheel and Axle Carrier Attachment (patented) shown carrying 2 wheel-sets. The carrier arms are folded back out of the way when not in use. The hook can carry still another wheel-set or truck, lift and spot them, carrying off replaced ones at same time.

**Write for Bulletin No. 69**

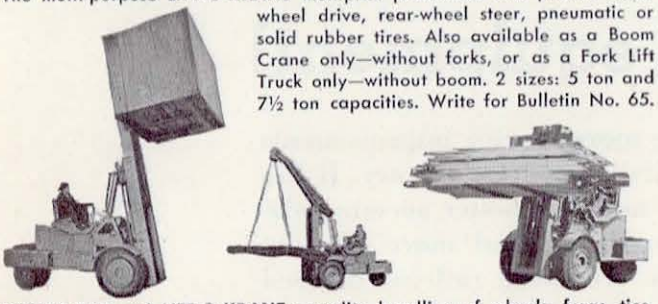
***RAIL-O-ROAD KRANE KAR***
***For Use on Railroad Tracks or on the Ground***

Available where you need it, when you need it—by raising flanged wheels, vehicle leaves tracks at crossing or siding. On the ground it is identical in every way with *KRANE KAR* in operation. Write for Bulletin No. 61.

## *LIFT-O-KRANE*

### Combination Mobile Boom Crane and Fork Lift Truck

The most versatile equipment in its category. Use it as a Mobile Boom Crane with the forks folded back out of the way *(center)* or use it as a Fork Lift Truck *(left and right figures)* . . . the boom is quickly and easily removed. The multi-purpose *LIFT-O-KRANE* multiplies production and profits. Front-wheel drive, rear-wheel steer, pneumatic or solid rubber tires. Also available as a Boom Crane only—without forks, or as a Fork Lift Truck only—without boom. 2 sizes: 5 ton and 7½ ton capacities. Write for Bulletin No. 65.



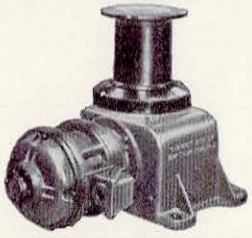
*KRANE KAR* and *LIFT-O-KRANE* expedite handling of wheels, frogs, ties, lumber, crates, steel, etc. For loading and unloading freight cars; tiering, stacking, and handling stores; for maintenance and repair of locomotives, cars, wheels, and railway structures. Magnet and clamshell bucket available for handling metal, sand, gravel, scrap, etc.

## New Model TM Electric Capstan Car Puller

### Gearing Integral with Motor!

**2 SIZES: 5,000 LB. AND 10,000 LB. DRAW-BAR PULLING CAPACITIES**

**ONE MAN OPERATION**
**LOW UPKEEP COST**
**LOW FIRST COST**



With this car spotter ONE man can move cars, warp barges, tow trucks, bend pipe, move skids and loads of all kinds. Powerful, compact, dirt-proof, waterproof, foolproof! Equipped with SILENT HOIST totally enclosed worm gear reduction. Standardization and mass manufacture make low price possible. *Send for Bulletin No. 64.*

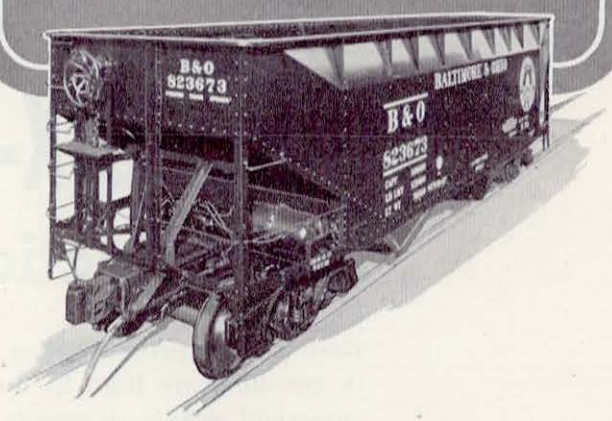
**Silent Hoist & Crane Co.**

**847 63rd ST., BROOKLYN 20, NEW YORK**

# RALSTON

***has earned a world-wide reputation for***

# RELIABILITY




## 44 Years of

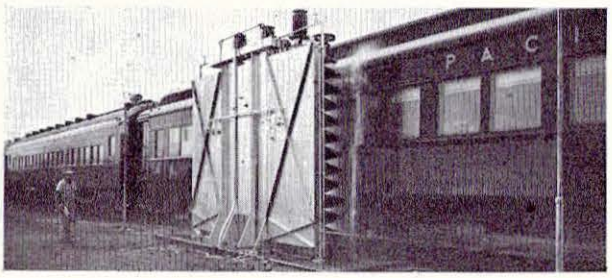
**continuous, efficient performance is your time-tested proof of**

## R A L S T O N

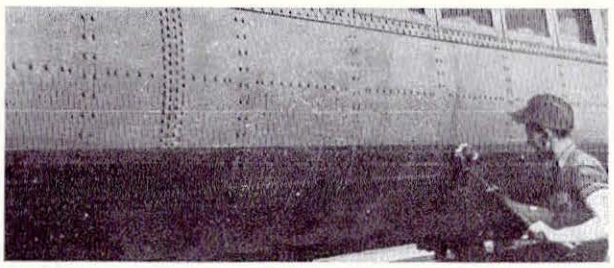
**ability for handling your needs for Freight Cars and Freight Car Repair Parts**

**RALSTON**
**STEEL CAR COMPANY**
Columbus 16, Ohio
*Builders of Freight Equipment and Repair Parts*

# OAKITE materials point way to ECONOMY in coach washing



Wash AUTOMATICALLY with Oakite materials



Wash MANUALLY with Oakite materials

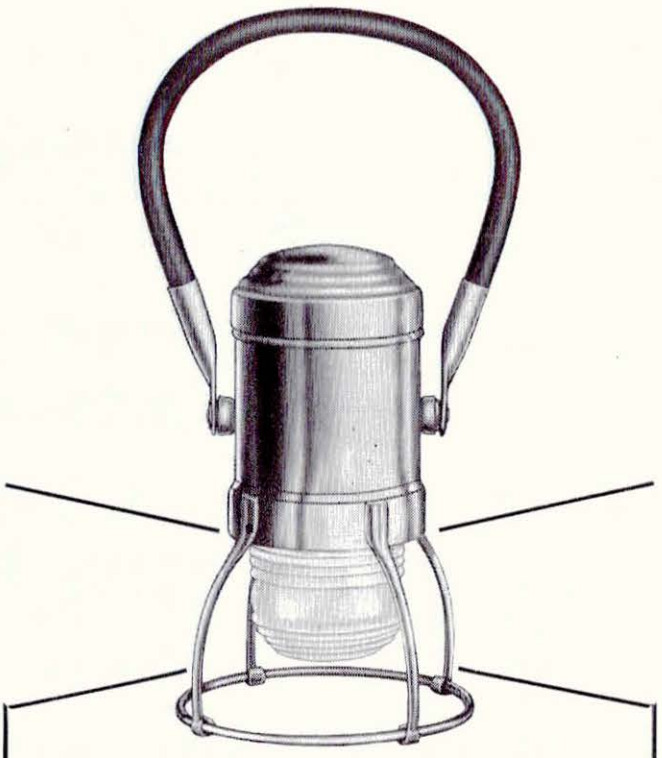
Whether your coaches are washed with AUTOMATIC equipment or washed MANUALLY, remember that the type of soil and road film to be removed varies in each section of the country. It is the important reason why, if you want to do a GOOD coach-washing job, specially designed cleaning materials are required.

Oakite Research Laboratories have made available these DIFFERENT specialized coach-washing materials so that stubborn road film is removed with SAFETY to surfaces, in short time, and with ECONOMY in mind. Through the experienced representatives of the Oakite Railway Service Division, you can obtain all the benefits of their wide knowledge of coach-washing, the correct materials to use, and their personal services in working with your coach-washing crews . . . all without obligation or cost on your part. Arrange to make a test with specialized Oakite coach-washing materials on your coaches and streamlined power units, and note the improved results you get. Your inquiry invited and promptly answered.

**OAKITE PRODUCTS, INC., 46 Thames Street, NEW YORK 6, N. Y.**
*In Canada: Oakite Products of Canada, Ltd. 65 Front St. East, Toronto, Ont.*

**OAKITE RAILWAY SERVICE DIVISION**





# for Safety and Dependability

## STAR 3-BULB ELECTRIC FLAGGING LANTERN

Here is a lantern as modern as a Diesel Locomotive. Star Model 204 is rapidly becoming a favorite with Railroad Men who want the best safety equipment obtainable. Exceeds A.A.R. Specifications.

When you decide to purchase Electric Flagging Lanterns—consider Star Model 204.

Three bulbs give a flexibility not found in other Lanterns, besides giving an additional safety factor of 50%. Unique mechanism eliminates sliding block type switch. Light is controlled and bulbs rotated by turning wire guard.

Equipped with A.A.R. approved Fresnel Globe; Red for Flagging; Yellow for Switch Tenders; Blue for Safety Signal; Clear for Trainmen. One Lantern for every signalling requirement. Globes interchangeable without tools.

Star Lanterns will save you money through indefinitely longer service, rare need of repairs. Ask the man who owns one!

Write for descriptive folder.

**STAR HEADLIGHT AND LANTERN COMPANY**
89 Allen Street, Rochester 6, N. Y.
GUIDING THE WORLD'S RAILROADS SINCE 1889

# SOMETHING NEW IN TURNTABLE TRUCKS

**A DIRECT DRIVE ON THE AXLE — NO NOISE, NO EXPOSED GEARS. ROLLER BEARINGS THROUGHOUT.**

Good news for users of turntables installed 1920—1940. We are renewing and improving the end trucks, worn or out of alignment. We are servicing these with new roller bearings and improved alignment, eliminating noise and excessive wear.

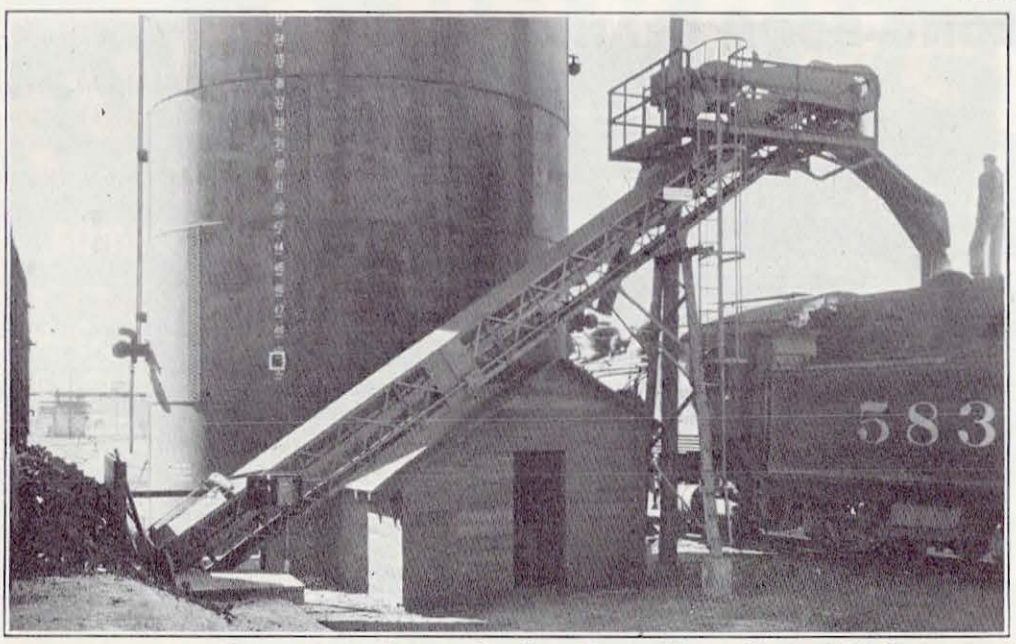
Turntable Tractors and Trucks
Transfer Tables for Shops and Diesel Houses

## THE NICHOLS ENGINEERING COMPANY

**2400 W. Madison Street, Chicago 12, Ill.**

## "RED DEVIL" LOCOMOTIVE-COALER

**JUST ERECTED BY US—** FOR SANTA FE SYSTEM - TOPEKA




CANADIAN REPRESENTATIVES
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SOUTHWESTERN REPRESENTATIVE
*W. D. Jenkins 1317 Praetorian Bldg., Dallas, Texas*

ST. LOUIS REPRESENTATIVE
*E. T. Schroeder, 1205 Syndicate Trust Bldg., St. Louis, Mo.*

WEST COAST REPRESENTATIVE
*Gordon H. Proffitt, 215 Market St., San Francisco, Cal.*

***Heavy Duty Type—Coaling Capacities—Up to 190 Tons per Hour***

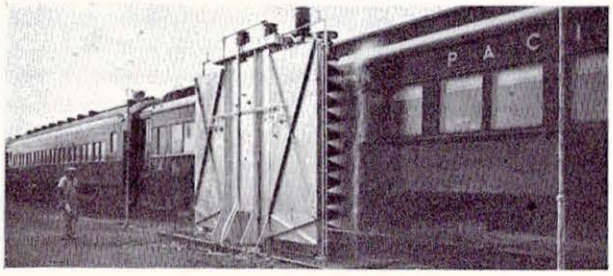
MANUFACTURED EXCLUSIVELY by

## ROSS AND WHITE COMPANY.

CHICAGO DAILY NEWS BUILDING, CHICAGO 6

CLYDE P. ROSS, President • DAVID E. WHITE, Vice President

# OAKITE materials point way to ECONOMY in coach washing



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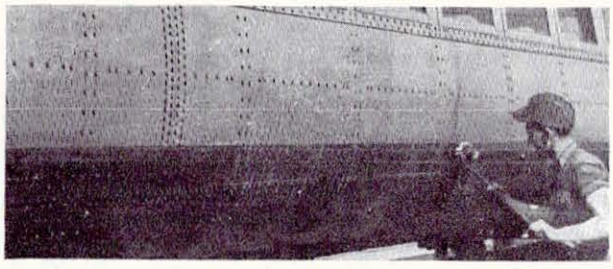

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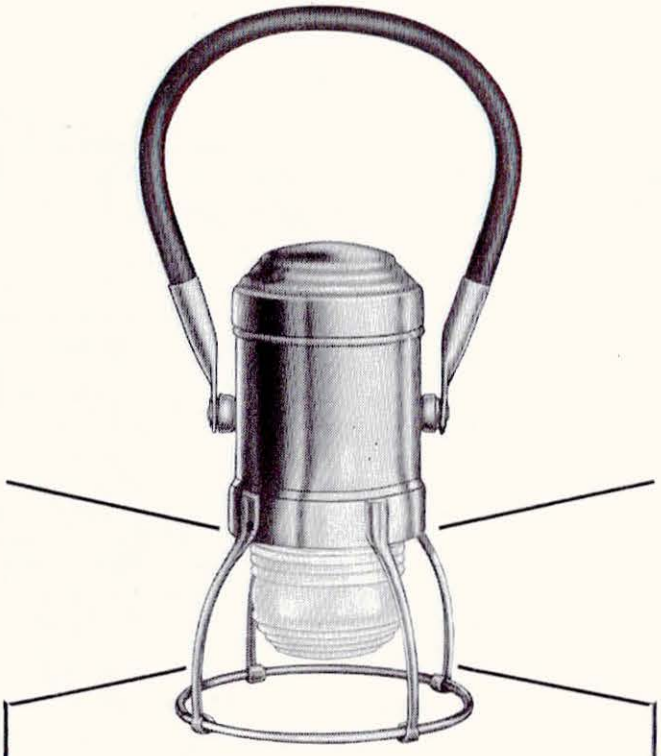

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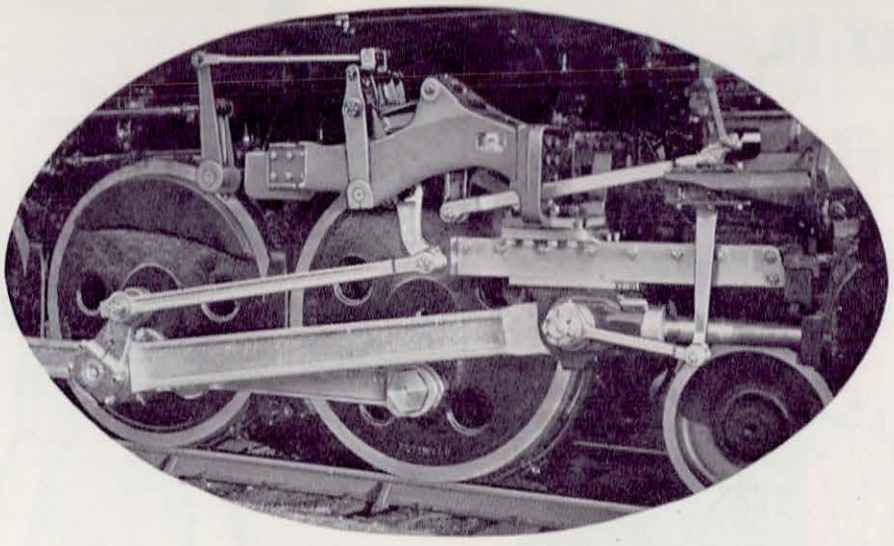
Write for descriptive folder.

**STAR HEADLIGHT AND LANTERN COMPANY**
89 Allen Street, Rochester 6, N. Y.
GUIDING THE WORLD'S RAILROADS SINCE 1889

# BAKER VALVE GEAR



IMPROVES VALVE EVENTS
MORE POWER WITH LESS FUEL
LESS MAINTENANCE WITH MULTIROL BEARINGS

## THE PILLIOD COMPANY

FACTORY, SWANTON, OHIO

30 Church Street, New York, N. Y. 332 So. Michigan Ave., Chicago, Illinois

# TUCO PRODUCTS

## TUCOLITH COMPOSITION FLOORING

A & B Types for long surface wear. L W-37 or VIII for light weight sub-floor as base for ¼" thick surface of A & B Tucolith or as a base for cementing any type floor covering.

## TUCO-DOREX ODOR ADSORBERS

For Air-Conditioned Cars and Buses.

Dorex panels consist of a series of staggered perforated metal tubes filled with hard granulated carbon which adsorbs odors from contaminated air passing through them.

## TUCO TREATED CANVAS

For car roofs and cab curtains.

## TUCO ROCKWOOL INSULATION

TP-2F Zerocel-semi-flexible blocks, require no stitched binding.

★ *Tuco Trap Doors* ★ *Tuco Eclipse Deck Sash Ratchets*

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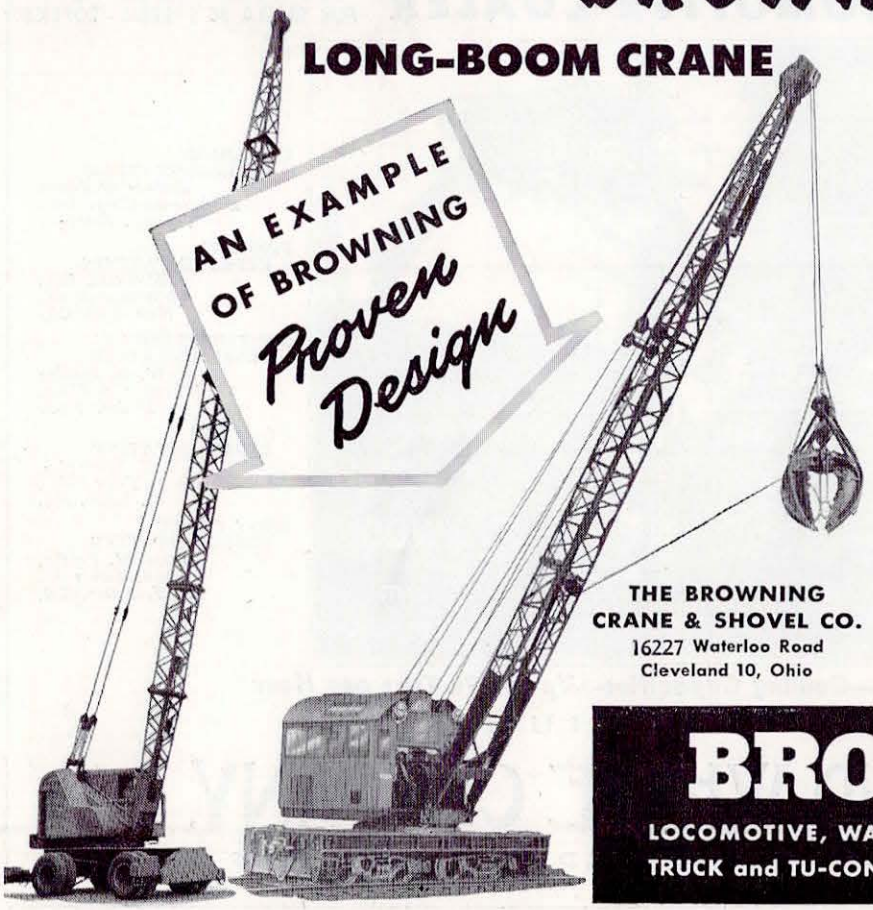


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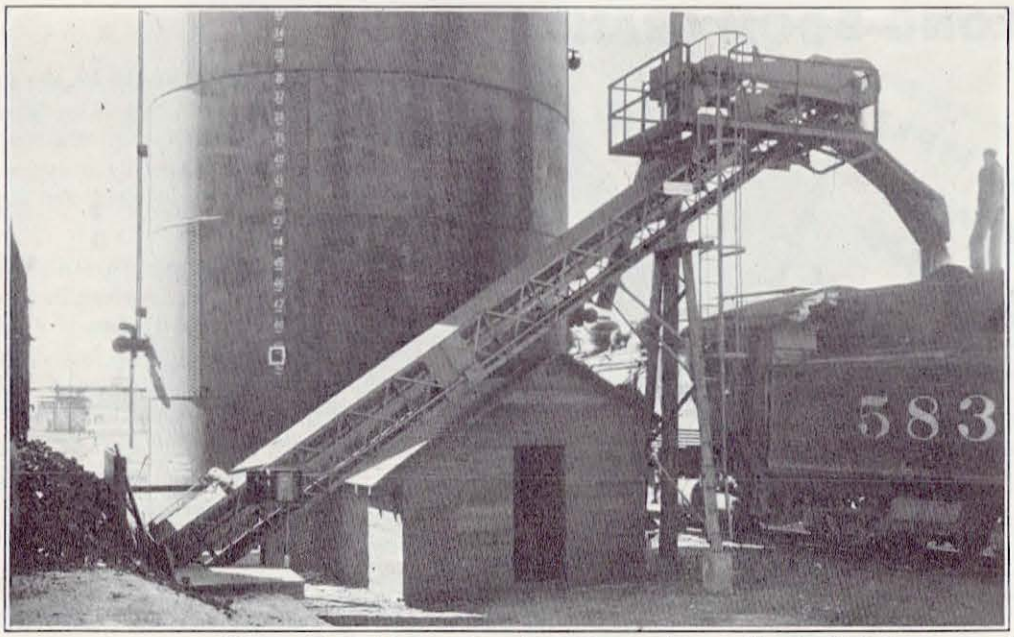


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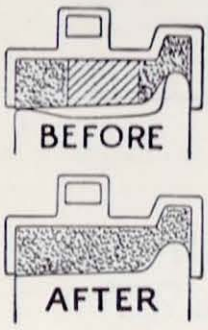


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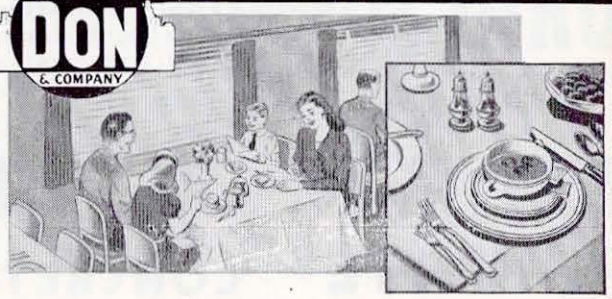

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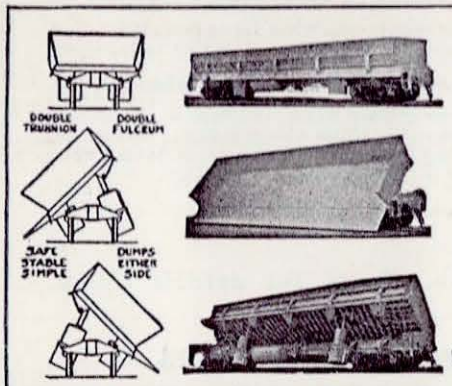


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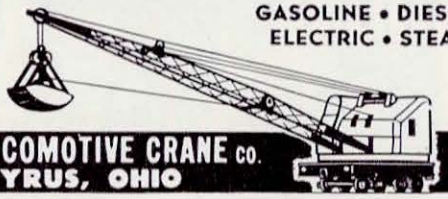

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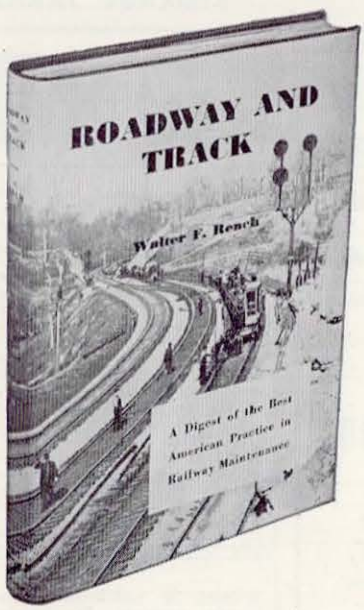


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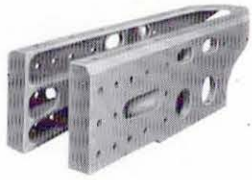

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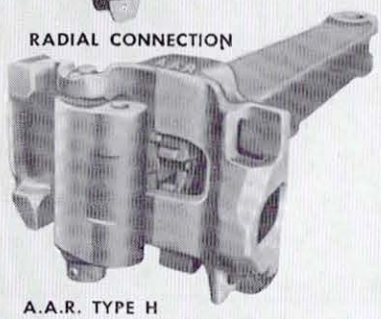

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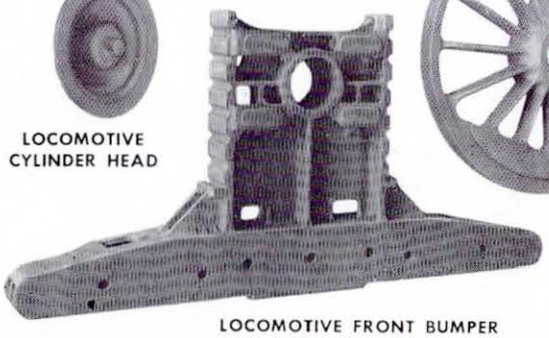

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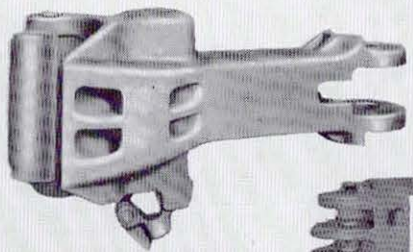

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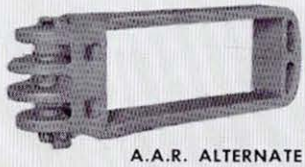

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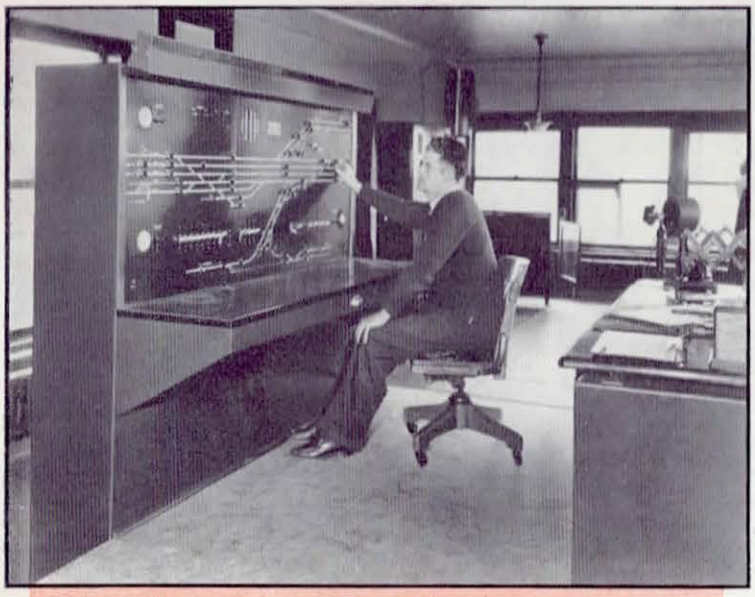

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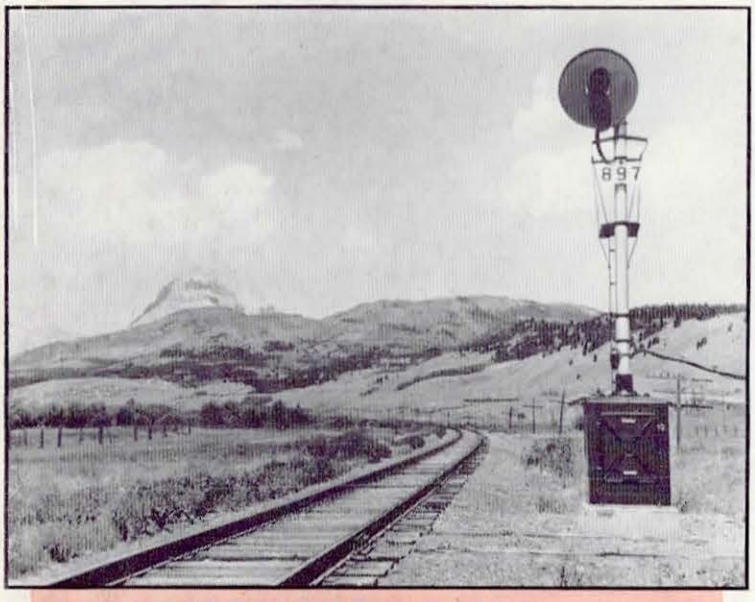


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